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INDEX TO CONTENTS, PAGE 227 ADVERTISERS' INDEX, PAGE 20

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Getting Intimate with the Public

Appearances Vary with the Point of View—That Which Seems Unfriendly, Cold and Aloof Looks Different When We Get to Know It Better

By J. E. BULLARD

Not so very long ago there appeared in one of our leading magazines a story which showed how cold and unhomely are the houses of the very rich and how disagreeable and unfriendly appears the neighborhoods in which they live. It pictured the heartlessness, aloofness, the thoughtlessness for others and the lack of charity of these rich people.

Then the hero falls in love with a very rich girl. She returns his love and he becomes a very frequent visitor at the house. Soon things take on an entirely different aspect and the story ends by showing the real warmth and cheerfulness of the houses of the rich and the friendly agreeable neighborhoods in which these houses are located. It pictures the very kindly feeling, the true hospitality and the thoughtfulness for others of certain rich people.

Appearances Depend on Point of View

The story brings out with a great deal of vividness the fact that the way things appear to us depend upon our point of view and that our point of view depends upon how intimate we are with our subject.

The reason why the public is not more friendly with public service corporations if we can believe the teachings of this story is because it knows so little about them, because it is not intimate with them. The experiences of the past four years would indicate that these teachings are true.

Those public service corporations about which the public know the most are the ones which have experienced less difficulty in securing rate increases or any other concessions required to maintain the companies on a profit or at least a self-sustaining basis. Those public service corporations about which the public has been able to learn the least are having the most trouble. In fact they are daily going into the hands of receivers.

Very fortunately gas companies have been more confidential with the public during the present generation than they were during the first fifty or seventy-five years of their existence. The friendliness that has been cultivated during the past twenty years or so has stood them in good stead during the past few years.

Public and Gas Companies Still Comparative Strangers

Yet there are indications that the public and the gas companies are still comparative strangers. Not yet has the public become well enough acquainted with gas companies to place as much trust in them as it is wise for them to place.

In one of our cities the gas company has offices in a large new building. Directly opposite this building is an old building in which is the office of the Gas Consumers Protective Association. As can be seen from the name of this company it thrives on the ill will that can be built up for the gas company. It is one of the indications that there is still more work for the gas company to do.

If the public was more intimate with the gas company this so called protective association could not exist. It exists because people imagine that the company forces gas through the meter and that it also mixes air with the gas. Even intelligent people will listen to the tales told them by friends or solicitors of this association and give them credence in spite of the fact that they are entirely contrary to reason.

If the public could be made more intimate with the gas company, if it was shown more in detail how gas is made and how it is distributed, if it was shown how much time, expense and effort is given to bettering the service rendered to the consumers and to the public in general it would not be possible for many concerns that are now living upon the ill will towards the gas company to exist.

People have little idea how carefully gas meters are tested. Many people will listen with a great deal of interest when the process is explained to them even though the explanation comes as a result of a complaint and at

the time when these people are not in a mood to listen to excuses. If the public as a whole could be told, if it was told through the newspaper columns, circular letters, folders, and other form of advertising, just what the gas company is doing in order to improve the service that is being rendered there is every reason to believe that there would be a very much better feeling towards the gas company.

Of course it would be better to take the people individually or in small groups through the plant and show them every step, show them how much effort is being put forth to give the very best service at the very lowest cost. It, however, is not possible to do this in large cities. Many people would not visit the plant and many that did would be people from out of town.

The gas company in this respect has a different problem upon its hand than that of certain manufacturers who take sightseers through their plants. These manufacturers are showing their plant and processes to prospective customers while a gas company would be showing its processes and plant in many cases to people to whom it could not possibly sell gas and would not be doing so to many people to whom it could sell gas.

Advertising, however, serves very well as a substitute for personal demonstrations. Pictures and copy can be used to give the information that will make the public very much better acquainted with the company than it is at present. Such a course also pays.

When They Know About It They Use It

A certain company opened up a new territory. It used the newspapers as much to tell the people all about the gas company as it did to try to sell them gas. At the end of a couple of years it was discovered that this territory showed a larger gas consumption per meter and per capita of population than any other section erved by the company.

The only methods employed which had been different were the publicity methods. In this new section the people felt well acquainted with the gas company. In the other sections, they looked upon it as a stranger.

Misinformation does not always originate with the enemies of the company. Quite often employees can be found who are so ignorant of the gas business that they circulate information that is erroneous and costly to the company. It, therefore, is necessary to make these employees better acquainted with the company as well as the general public.

There are several persistent fallacies which it is necessary to eradicate from the minds of the people in order to secure the very best results in the gas field. The reason why certain manufacturers have been able to grow so rapidly and to prosper so largely has been because they have never allowed any such fallacies to exist in regard to their own products.

Many people have false ideas in regard to the manufacture and the measurement of gas. If there is anything wrong with their appliances, if they don't get the very best results from the gas they burn, if their gas bill is high they are likely to charge that the gas has been adulterated. They may claim that air has been mixed with it or that something else has been used. In any case they are sure that there is something in it that lowers its value.

If these people knew how the gas was made and how carefully and how often it is tested by the company's experts and by Government officials as well, they could not persist in the beliefs that they hold to-day. The better they become acquainted with the methods used the more confidence they will have in the gas company.

Another cause of much mystery is the gas meter. It is rather difficult to make the action of the meter clear to every person. It is not, however, difficult to show them how carefully the meter is tested, that just as much care is taken to keep the gas meter accurate in its work as is taken to keep the scales and measures at the butchers and the grocers accurate.

There are a great many people who could not comprehend the mechanism of a set of scales if you started out to explain how scales are made. It is not the mechanism that interests them. What does interest them is the accuracy of these scales and they have confidence in this accuracy because the scales are tested periodically by Government officials.

It is the same way with the gas meter. People don't care how it is made or on what principle it operates. What they are interested in is its accuracy. Teach them how accurate it is, how carefully and how often it is tested and how few ever register fast, and many of the high bill complaints and requests to have meters removed or tested will disappear.

There are a host of little things that can be told the public that will prove interesting and which will make people will begin to support the company more whole-the technical things that they want to know. It is what is being done to protect their interests that counts.

Publish these things in the newspapers, get them before the public in every other possible way, and the people will begin to support the company more whole heartedly than they have ever done so in the past. It is not what the gas company does so much that counts as it is what the people think it does. It is not what the policy of the company actually is that affects public relations so much as it is what the people think the policy of the company is. Therefore, the greatest success requires greater intimacy between the company and the public.

Device for Gauging Consumption of Gas Through By-Pass Valve

Thomas F. Noonan, a foreman in one of the shops of the Peoples Gas Light & Coke Company of Chicago, has invented and constructed a device whereby the quantity of gas consumed through a "by-pass" valve can be accurately gauged. Meters set on industrial installations are furnished with a "by-pass." If it becomes necessary to remove the meter for any reason the "by-pass" valve is opened and the supply of gas continued, but unmetered.

The Noonan device, for which patent has been applied, consists of a valve placed on the by-pass pipe which connects the service to the riser. This valve is connected by a stem to the clock in the Bristol recording gauge placed immediately above it. The action of opening the valve stops the clock and the recording mechanism, thereby definitely determining at what time the meter was "by-passed." A veeder box is also actuated by the stem when the valve is closed. This box records the number of times the valve is opened and closed. From these facts and the known capacity of the pipe it would be a comparatively simple matter to ascertain the amount of gas consumed during the time the meter was out of commission.

Oxy-Hydrogen Gas — Its Uses at the J. I. Case Threshing Machine Company, Manufacturers of Tractors and Farm Implements

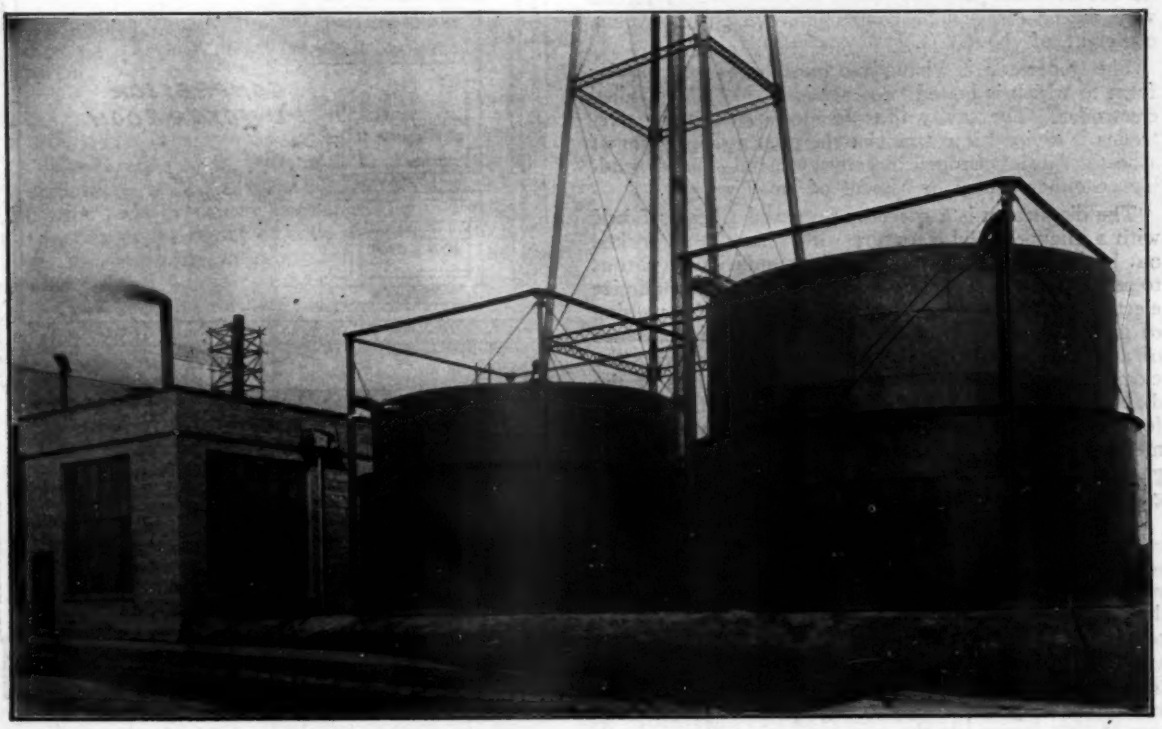
Purity of Gases Produced Insures Maximum Efficiency for Cutting and Welding Parts of the Case Farm Implement Products

By CHARLES KANDEL
Construction Engineer of the International Oxygen Company of Newark, N. J.

Gratifying results are obtained every day with the use of electrolytic gases for cutting and welding parts of farm implements manufactured at the plant of the J. I. Case Threshing Machine Company in Racine, Wisconsin. The Case company manufactures large tractors and farm implements of every description for distribution to the most remote corners of the earth; also a large part of its work is the mending and repairing of farm implements. The fuel used in the high speed steel furnaces, oil tempering baths, and for soldering and Babbitt melting is manufactured gas; but for the cutting and welding of the various parts which enter into the making of tractors, and the making of rims for seamless gears for the tractors and wherever hydraulic pressure is used the work is all done with electrolytic gas, generated in the company's own plant recently installed by the International Oxygen Company.

The history of the electrolytic gas industry has a background of romance as interesting as any found in modern industry.

About ten years ago a firm of manufacturing jewelers in France were importing into this country synthetic sapphires, rubies, emeralds and other precious stones. One of the younger and more progressive members of this firm conceived the idea of manufacturing these stones in this country in the very heart of a good market for their disposal. His first problem was to find a satisfactory source of pure oxygen needed for their manufacture, but he found none. Undaunted, he decided to establish such a source as a side issue to the jewelry business, and soon the first electrolytic cell made in the United States was produced. It was a curious clumsy-looking thing compared with the neat, compact cell used to-day; but it was successful. So was the manufacture of synthetic stones. However, when it came to cutting and polishing the stones, the situation was hopeless. America at that time could not produce stone cutters on a par with those trained for generations abroad, and this work had to be done in Europe. So the manufacture of synthetic stones in America was



VIEW OF GAS PLANT BUILDING AND THE OXYGEN AND HYDROGEN GAS HOLDERS

abandoned, but the electrolytic gas industry had come to stay.

Installation at the J. I. Case Threshing Machine Company

The oxy-hydrogen plant at the Case works is housed in a small building on the grounds. It generates oxygen and hydrogen by the electrolysis of water, or the application of electric current to water, decomposing the water into its component elements—oxygen and hydrogen—producing gases which flow into supply lines at the desired pressure to the various shops. Skilled mechanics then attach torches to these supply lines or sometimes to portable cylinders which are used in remote places and perform the cutting and welding of parts for the Case threshing machine products.

The Case gas plant consists of: A motor generator set and switchboard for converting and regulating the electric current obtained from the main power house into a form suitable for the gas generating equipment; a battery of 50 cells for the electrolytic decomposition of water, capable of producing close to 10,000 cu. ft. of oxygen and twice as much of hydrogen in 24 hours; auxiliary equipment for collecting, compressing and storing the gases ready for transmission to the shop by means of pipe lines or in portable cylinders.

Each cell of the 50-cell battery is a "Unit" generator. The term "Unit" as applied means that each generator is self contained or complete in itself, capable of generating pure oxygen and pure hydrogen at a rate determined by the amperage of the electric current supplied.

Each of these units requires a floor space of 4 in. by 42 in., or about the equivalent of a square foot; and with the necessary pipe connections needs head room, or height, of about 7 ft.

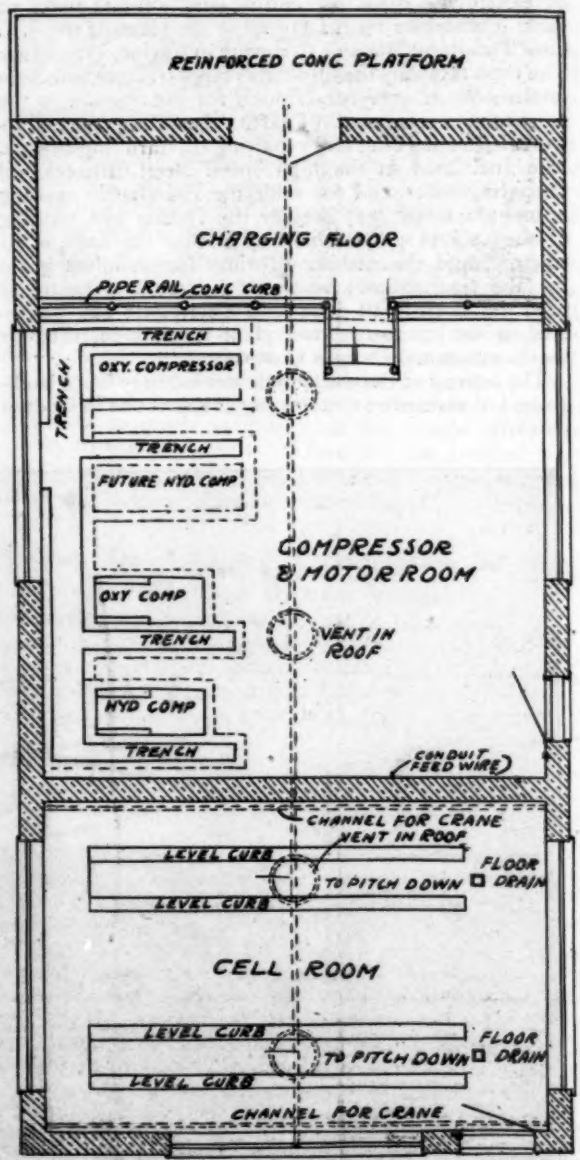
The generator is virtually a casting of rectangular form to which is bolted two cast iron side plates called electrodes. The cavity thus formed between the electrodes is divided into two chambers by a diaphragm of asbestos fabric, clamped directly by metal—not depending on either rubber or cement of any kind.

The diaphragm is a specially prepared asbestos fabric with a thickness and a texture which have been worked out by long experience. While it is sufficiently porous to permit saturation by the electrolyte and thus minimize electrical resistance, it effectively prevents the passing of gas from one side to the other. The entire absence of any scale or solid matter in the solution prevents the clogging of the pores of the fabric. The edges of the diaphragm, all around, are held between a flange projecting inward from the body of the generator, and a metal clamping rim bolted to this flange. An absolutely gas-tight joint is thus secured without any packing or gaskets of any description.

In the upper part of the cast iron frame, or electrode, is a reservoir for the electrolyte—or solution of caustic soda or caustic potash in distilled water. From this reservoir the electrolyte is fed to the two sides of the diaphragm. The two gas chambers which permit the separation of the gas from the moisture and electrolyte are also located in the upper part of the frame of the cell, and serve as gas traps and gas off-takes, as well as an automatic pressure controlling device. At the bottom of this frame are the communicating passageways which permit the equalization of densities in the electrolyte, thus maintaining a high electrical efficiency under continuous operation.

Each cell is permanently secured to an eye-bolt, to facilitate handling and shifting from place to place. With each installation there is provided at least one special plug valve or draining device which permits the electrolyte to be drained from the cell when desired, eliminating the inconveniences of the ordinary valves which are sometimes used in draining caustic liquids.

The cells are capable of operating anywhere from 200 amperes to 1,000 amperes and the gas output is directly proportionate to the current applied to the cells. For example, at 200 amperes the 50 cells would produce close to 2,000 cu. ft. of oxygen and 4,000 cu. ft. of hydrogen in 24 hours. At 600 amperes the cells would



FLOOR PLAN

produce close to 6,000 cu. ft. of oxygen and 12,000 cu. ft. of hydrogen in 24 hours, and at 1,000 amperes the cells would produce very close to 10,000 cu. ft. of oxygen and 20,000 cu. ft. of hydrogen in 24 hours.

This great flexibility in operation and production makes this type of plant exceedingly advantageous. For instance it is possible to operate at 200 amperes when the demands for gas are low and through the instantaneous regulations of the current, it can be readily operated at 1,000 amperes, producing just five times as much gas. This means that the regular as well as the unexpected demand for its gas can be met almost instantly. The advantages of such a supply are self-apparent.

BATTERY OF FIFTY OXY-HYDROGEN GENERATORS—OVERHEAD IS A VIEW OF THE DISTILLING APPARATUS AND DISTILLED WATER STORAGE TANK WHICH FURNISHES AUTOMATIC WATER FEED TO EACH CELL INDIVIDUALLY

Method of Operation

The interior of the cell on both sides of the asbestos diaphragm is filled with electrolyte—the solution of caustic soda or caustic potash in distilled water. The function of the dissolved soda or potash is to lower the resistance of the solution through which the current must pass.

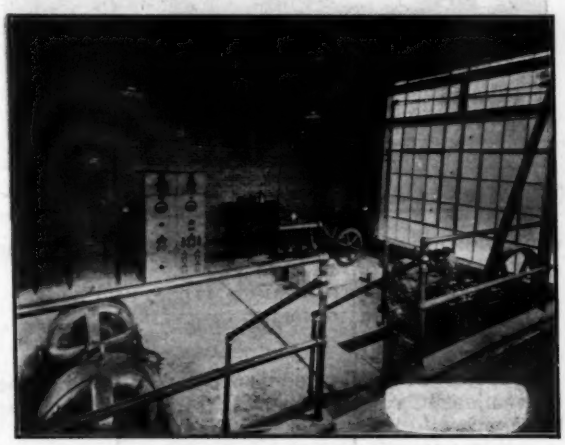
The side plates forming the electrodes of the generator are electrically insulated from the cast iron frame and from one another by means of special composition gasket. The electric current applied to one electrode flows through the electrolyte to the other electrode and in its passage decomposes the water into its constituent gases. These are released at the surface of the electrodes, two volumes of hydrogen to each volume of oxygen.

The oxygen and hydrogen are generated in separate compartments within each cell upon the application of the electric current. The oxygen is generated on the anode; the hydrogen on the cathode. These gases mount upward along the surface of the electrodes to the collecting chambers above, passing through individual traps through a water cell which acts as a scrubber of the gases and also as a balancing medium against any unequal pressure within the cell. The level of the electrolyte is maintained by the occasional addition of distilled water to replace that decomposed into gases. The generation of the gases is continuous so long as current is supplied. The rate of generation varies with the amperage of the current used, as described above.

Each of the gases then enters a manifold off-take line and pass through a combination purger and flashback protector, then go to the gas holders in which they are collected.

From the gas holder the gas is led off to the compressor intake where it is compressed either in two stages to 300 lb. and discharged into a storage tank; or in three stages to 1,800 lb. in another compressor and discharged to a charging manifold line to which cylinders are attached for filling and shipment to plants where they have not their own generating installation, plants where for special work the demand is only occasional. At the Case plant, the gas is lead from the storage tank by means of underground piping to the various shops where it is consumed in quantities.

A plant the size of the one installed by the International Oxygen Company for the J. I. Case company can be and is successfully operated by a working crew of one foreman and three assistants. This crew is sufficient to cover the full 24 hours of each day and do all the work necessary in the production of the gases, compressing and charging into storage tanks and cylinders. Such a working crew can be and has been trained to operate such a plant in a period of from two to three weeks. Men experienced in the operation of electrolytic equipment, with some knowledge of compressors are usually the most satisfactory operators and can readily acquire the details of the operation of the plant in this period of time. Also they are capable of making any necessary minor repairs as they occur.



VIEW SHOWING CURRENT GENERATING AND CONTROL EQUIPMENT; ALSO THE 300 LB. TO 1,800 LB. OXYGEN COMPRESSORS

Purity of the Gases Produced

Oxygen and hydrogen produce purer gases at lower cost than any other commercial method of gas generation. The oxygen is obtained directly from the cells without any purification at a uniform purity of 99.6, and better at times. The hydrogen is obtained likewise directly from the cells without any purification at a uniform purity of 99.9, and better at times. This illustrates

the very high efficiency that necessarily obtains for cutting and welding. The design and construction of these generators was thought out to insure the purity of the gases under continuous and intensive operation. The purity of the gases is periodically confirmed by means of positive tests made by the plant operator in just a few minutes.

Safety

The ease and safety of operation of the plant is due in a large measure to the design and construction of the equipment, which is about as substantial as science and skill can make it. It is fully protected with pressure equalizing devices, water cells, purgers and flashbacks. The current supplied to the cells is further protected by means of approved safety devices, which insure a supply of the proper current and the proper intensity to the cells as previously determined by the operator.

VIEW SHOWING THE CHARGING LINE ON ELEVATED FLOOR FOR FILLING CYLINDERS TO 1,800 LB. FOR TRANSPORTATION. THE RAISED FLOOR FACILITATES THE HANDLING OF CYLINDERS

The safety of the electrolysis plants as installed by the International Oxygen Company is fully approved by the Underwriters' Laboratories.

Floor Plan of the Case Installation

The floor space occupied by the generating system at the Case works is 1,250 sq. ft. within the building and approximately an equal amount of space outside of the building for the two gas holders and storage tanks.

This same plant as now installed, with very slight modification, is capable of doubling its output merely by the addition of another 50-cell generator, which will make it possible to utilize the current available directly from the power house, eliminating completely the use of the motor generator set.

Therefore, this comparatively small floor space is adequate for a plant having just twice the present capacity. The cell room was laid out with provisions for doubling the output of the plant by the addition of another battery of 50 cells.

Advantages the Case Company Derives in Having Its Own Electrolytic Plant

The advantages of an individual plant over the purchasing of gases are:

First. The demand for the gases at the Case plant is constant and in sufficient quantity and can therefore be produced at less cost by its own generating plant than it can be purchased and delivered on the premises.

Second. The gas is obtainable at a purity well above 99.6 per cent for oxygen and 99.9 per cent for hydrogen, which purity insures a very substantial economy and efficiency in cutting and welding as compared with the results obtained from any other form of gas.

Third. The installation of the company's own generating plant absolutely insures a supply of gases at all times, regardless of conditions in the electrolytic gas industry and conditions of transportation. And further, it eliminates the use of cylinders and the cost of transporting them back and forth.

There are certain extra expenses inseparably associated with the use of gases purchased in cylinders. These are the freight charges on filled and empty cylinders; the cost of handling the cylinders; delays in delivery of cylinders due to freight congestion or other causes. The loss in this respect alone is often sufficient to pay for a generating plant. Also there is loss of gas due to leaking valves or breakage of valves in transit or in handling. With a private gas plant, gas is always available in ample quantities; it is piped direct to the point of application; no cylinders are needed.

Twenty-four hours each day the little gas plant goes about its work producing oxygen and hydrogen flaming the torches of skilled men in the Case plant's shops, and through them is accomplished the production of the tractors and other farm implements and machines without which the salvation of a half starved humanity abroad would be a hopeless task.

Government Operation of Railroads

A recent report states that approximately $486,000,000 represents the Government loss through operation of the railroads since Jan. 1, 1918. This deficit will have to be met from general taxes, so that the man who does not use the railroads a great deal will have to pay his share the same as the man who uses them daily.

When the Government took over the railroads, it effected economies by pooling interests, which method of economy the private owners hitherto had been prohibited. Further, the Government at once increased rates 50 per cent. The private owners had asked for an increase in rates of less than 20 per cent, which rates were denied.

Alton Company Refers Rate Petition to Commission

The Alton, Ill., Gas & Electric Company has decided to carry its fight for an increase in rates from $1.20 per 1,000 to $1.60 per 1,000 to the Illinois Public Utilities Commission. The company had asked the City of Alton to permit the $1.60 per 1,000 rate and were refused; the city offering to accept a rate of $1.40 per 1,000 as a compromise.

Need of Labor Saving Paramount Factor in Design of New Plant at Ypsilanti, Mich.

Motion of Manually Operated Coke Pusher Caused by Hand Chain Drive—Coke Storage and Handling

An example of a small gas plant undergoing changes wherein labor costs may be reduced to a minimum and the methods of handling material improved, is noted in the case of the new addition to the Municipal Gas Plant at Ypsilanti, Mich., now in process of construction by the Russell Engineering Company, St. Louis, Mo.

Owing to the high cost of labor in this city, which is within a short distance of Detroit, it was considered good policy by the management in building this addition to make a change from the old benches of stop end half depth 6's to three-quarter-depth throughs, with a manually operated coke pusher machine and a mechanical coke handling system of reasonable cost, all of which would make for better working conditions for the stokers and simple operation.

Benches of Standard Design

Two new three-quarter-depth benches of the Russell Engineering Company's standard design, each having six retorts built of silica materials and supported by silica block settings are to be constructed along an extension of general line of old benches and are to be housed under a building of reinforced concrete and steel frame construction. The present building wall between the old retort house and this building will be torn out and temporary side and roof coverings will be made between the old and the new, as it is planned to enlarge the addition and to instal other benches when the new ones are in operation.

The new building will be 43 ft. wide by 31 ft. long inside with a height of 27 ft. 4 in. to the lower cord of the roof truss. This provides ample room for the benches and their mountings, the coke pushing machine and track upon the charging side and a 9 by 9 ft. Craig Ridgway hydraulic steam elevator and four McDonald-Mann coke chutes upon the discharging side.

The walls of the building are to be of 8 in. thick reinforced concrete up to a height of 12 ft. except the pilasters under the building columns which are 15 by 24 in. From there up the walls are to be made 2 in. thick concrete reinforced with hy-rib steel lath. The roof will also be made of 2 in. hy-rib concrete waterproof with two coats of tar paint. The sides above the 8 in. concrete wall are to be supported by the building columns and steel framing, and the roof by steel purlins resting on steel roof trusses. Ventilation will be taken care of by large steel sash fitted with ventilators and by means of a monitor on the roof.

This design will provide for strong fire resistive and weather proof construction, with a minimum of material and the use of less expensive labor during construction.

The stage floor is 9 ft. above the basement level which is on the same plane as the present charging floor in the old retort house. The manually operated coke pushing machine, designed by the Russell Engineering Company will move parallel to line of the benches on 50 lb. rails embedded in the concrete stage floor and fastened to the floor beams. This motion will be caused by hand chain drive. The vertical motion of the pusher is to be taken care of in the same manner and the in-and-out motion by a train of gears designed to give the proper purchase necessary for ease of operation.

Overhead Bunker in Coal House

The old elevator which sets in the coal house just outside the new building wall on the charging side will be used for bringing up the bench fuel and the gas coal in larries to the stage floor level. The furnace and retorts will then be charged by hand from these larries. Later on it is planned to provide an overhead bunker in the coal house with a chute leading to the larries at the charging floor level.

The coke when pushed out by the pushing machine will fall into the coke chutes and then be rapidly quenched by means of a spray system operated by quick opening valves. From the chutes the coke will fall by gravity into side dumping coke cars resting on 16 lb. industrial rails running parallel to the line of benches. This car will then be pushed a short distance along the industrial track to the steam hydraulic elevator, there lifted 22 ft. to an overhead runway of steel construction connecting the new building with the coke storage house 30 ft. away. Here the coke is to be stored on both sides and under a 90 ft. extension of the runway.

All the bench mountings and bracing are being made of heavy material to withstand the wear and tear and to hold the bench material in place.

The furnaces are to be provided with superheated steam piping according to the Russell Engineering Company's standard design which allows for steady regulation of the primary air and the correct gasifying of the fuel in the furnaces.

Plenty of clearance has been provided between the benches and the edges of the concrete floors to allow for expansion and thus prevent lateral thrusts on the building walls in which the ends of the floor beams are embedded.

Everything has been planned for simple and rapid construction and it is now expected the new plant will be in operation before the cold weather sets in.

Increasing the Ammonia Yield

The process of high-temperature carbonization with an efficiency of recovery approaching 80 per cent can scarcely be said to provide much room for economic improvement, but there is one direction in which it is frequently assailed, and that is as regards the yield of ammonia.

The ordinary bituminous coal employed in gas-works contains on an average about 1.5 per cent of nitrogenous

organic matter, which represents a yield of nearly 160 lb. of sulphate of ammonia from each ton of coal, on the assumption that the whole of the nitrogen is recoverable in this form. As is well known, the yield in practice falls very far short of the theoretical maximum, the returns of even the largest undertakings, Great Britain showing a recovery of only 26 to 27 lb., or about one-sixth of the quantity represented by the total nitrogen in the coal. For some years attention has been directed towards recovering a greater proportion of the original nitrogen, but although plants for the generation of low-grade are operating successfully in this respect, the conditions under which the increased yield is obtained are scarcely consistent with ordinary gas-work methods. As an instance, mention may be made of the Mond gas system, by means of which an average yield of 96 lb. of sulphate of ammonia is obtained per ton of coal, a quantity which represents 25 lb. of ammonia, equivalent to 65 per cent of the total nitrogen. In view of the fact that there appears (in spite of the knowledge gained from wartime research) to be little enthusiasm for synthetic ammonia production on a large scale in Great Britain, and apart from low-temperature carbonization, there remains but one expedient by means of which our ammonia output can be augmented, and that is the possibility of turning to more efficient account the nitrogen of our bituminous coals. Fortunately the modern principles of carbonization are moving in the right direction, for some considerable increase in the recovered ammonia has followed the now general practice of steaming the coal charge in continuously operated vertical retorts.

Details of the working of vertical retorts collected over a considerable period show that, with steaming carried out continuously, the normal yield of 35 gal. of 8 oz. ammoniacal liquor per ton of coal may be enhanced to something between 50 and 60 gal. The reason why this appreciable increase occurs has not as yet been definitely explained, but as ammonia begins to decompose at a temperature of 500 deg. Cent., and is almost completely broken down if it comes into contact with hot surfaces of 800 deg., it would seem that the steam, involving as it does an absorption of heat, exercises a cooling action in the retort, and also acts as a shield to the ammonia vapors. In this respect, it may be noted that the continuous vertical report, unlike the horizontal pattern, is not subject to a stage in the distillation period when the temperature of the charge approaches that of the retort, and thus the chief disintegrating influence is eliminated. Again, the work of Tervet and Beilby throws a good deal of light on the question. Tervet, in fact, succeeded in obtaining a yield of ammonia equivalent to 57 lb. of sulphate of ammonia per ton of coal, and he showed that if a stream of hydrogen is passed through the incandescent coke remaining after carbonization ammonia is formed by combination of the hydrogen with the residual nitrogen of the coke. This work was corroborated by Beilby, who employed a mixture of air and steam in lieu of hydrogen, so that the vertical retort process of to-day may be looked upon as a partial application to the gas retort of the principles made use of in the manufacture of Mond gas. A later development which should also assist very considerably in augmenting the yield of ammonia is the process of Perkin and West, whereby a stream of moderately low quality gas is passed in at the base of the vertical retort at such a rate as to carry the volatile matter away before degradation has time to occur. Although the method has primarily for its object the preservation of the hydrocarbons there can be little question that it must also reflect on the ammonia, for conditions of a thoroughly shielding nature are introduced, while synthesis is encouraged.

Some extremely interesting results have recently been published by Salmang, who endeavored to increase nitrogen recovery during the gassification of coke by adding chalk or oxide of iron to the bed of fuel in the generator. Varying mixtures of steam and air were passed through the fuel bed, and under the most favorable conditions 59 per cent of the free nitrogen was recovered as ammonia, a figure which agrees very closely with the yield obtained with the Mond gas plant. When, however, 5 per cent of chalk was intermixed with the coke the proportion of nitrogen recovered increased so high a figure as 96.3 per cent and with 5 per cent of oxide and iron added the figure was 70 per cent. Salmang says that under given conditions of ammonia concentration and duration of heating the rate of decomposition of ammonia in the presence of steam is only about an eighth to a thirtieth of what it is in a nitrogen atmosphere and without steam. In fact, the yield of ammonia is increased by the presence of steam in conjunction with a considerable excess of air. The effect of lime, too, was to increase the nitrogen obtained as ammonia up to 12 per cent in the case of coke derived from coal, and up to as much as 100 per cent when coke derived from peat was experimented with. The results are certainly interesting in that they confirm to some extent the experience gained at the Cheltenham gas-works where, by adding a small quantity of lime (about 2 per cent) to the raw coal before carbonization, it was found that the sulphate of ammonia recovered was augmented by some 2 lb. per ton of coal distilled, or an increase of from 8 to 10 per cent. Unfortunately, so long as towns' gas of the present description is made, it is not possible to arrange for the atmosphere which is most amenable to maximum ammonia output—namely, mixture of steam and air, and with the air excluded the maximum recovery obtained by Salmang was 20 per cent less than with a steam-air mixture.

Further interesting work on the ammonia problem has recently been published in Germany by F. Sommer, who says that the maximum yield of ammonia with typical German coals invariably occurs when distillation temperatures between 800 and 900 deg. Cent. are employed. In contradiction to previous workers, who have shown that with high temperature carbonization about 50 per cent of the total nitrogen of the coal remains in the coke, this investigator says that the greater proportion is retained therein—namely, up to 79 per cent.

Sommer also corroborates the fact that the presence of steam has a tendency to conserve ammonia, and he accounts for this by suggesting that the ammonia under such conditions is present as the hydroxide (NH_4OH) which is comparatively stable. Moreover, he is of the opinion that the inclined chamber oven is productive of better results than can be obtained with the vertical retort, for the necessary conditions—i. e., shortened time of contact with the hot charge through rapid removal of the gas, is more readily obtained therein. A similar advantage is obtained by increasing the size of coke ovens and by lowering the level of the upper collecting flue so as to avoid undue heating of the gas as it passes out. Benzol, in addition to the ammonia, is

thereby conserved particularly towards the closing period of carbonization when all the moisture has been driven from the coal. Speaking of moisture in the original coal it may be mentioned that although dry coal is looked upon as essential in the ordinary gas-works process there can be no doubt that, whatsoever the effect of moisture in other directions, it is certainly helpful in the wat of ammonia recovery, as is shown by the large increase in this by-product which is obtained when improperly dried washed coal is used.

When coal is carbonized a small proportion of free oxygen is always evolved from the coal substance as distinct from that which may be drawn into the retort through ill-fitting floors. The oxygen has a decidedly lowering influence on both ammonia and benzene, which have comparatively low ignition temperatures. Sommer points out that the oxidation of ammonia by air begins at 150 deg. Cent. and increases in effect with rise in temperature. At 250 deg. 5.86 per cent. of the ammonia is oxidized, although moisture acts as a decided preserving agent. At 450 deg. 12.89 per cent of ammonia was shown to be lost under dry conditions and 2 per cent in the presence of moisture. It is interesting to note, however, that sulphuretted hydrogen, which is a primary product of carbonization and which is, therefore, invariably present in the gas mixture simultaneously with ammonia, is oxidized very much more readily. It has accordingly a distinct protective action, particularly as—unlike ammonia—its tendency to oxidize is accentuated by the presence of moisture. Sommer found, in fact, that at 100 deg. Cent., 25 per cent of the sulphuretted hydrogen was oxidized, and at 425 deg. 95.3 per cent disappeared; whereas at the same temperatures under dry conditions only 0.26 and 1.48 per cent was effected. Thus the sulphuretted hydrogen by its more ready action with oxygen tends to conserve the ammonia and prevent its destruction.

Prof. Thomas Gray, who is at present in charge of the Fuel Research Station at East Greenwich, has stated that the ammonia formed during the earlier stages of carbonization is evidently a primary product; but as the heat penetrates the charge water still present in the interior is vaporized, and, along with the water vapor which results from the decomposition of the coal, passes through the highly heated and almost completely carbonized outer skin. It is then partly decomposed by the incandescent carbon, with the formation of carbon monoxide and carbon dioxide, while the hydrogen liberated with the nitrogen of the coke to form ammonia synthetically. The production of the secondary ammonia was explained by Tervet, who expressed the opinion that the nitrogen in the coke can be liberated in the form of ammonia so long as the latter is brought into a state of strain which will prevent it from undergoing subsequent degradation. This state is effected by subjecting the ammonia to the superior affinity which exists between the combined nitrogen in the coke and free nitrogen at a particular temperature and in a diluting atmosphere. Thus, during the later stages of carbonization, when hydrogen is being freely evolved, the Tervet reaction comes into play, and continues throughout the remainder of the period, though the ammonia which is formed towards the end of the process is, no doubt, decomposed to some extent.

The increased yield of ammonia at high carbonization temperatures is attributable to secondary reactions of this nature, and more especially to the action of hydrogen. It would appear, then, that there are considerable possibilities of augmenting the yield of this by-product beyond the normal 26 lb. of sulphate of ammonia as at present obtained; and, though the admission of steam to the retort is playing a helpful part, there can be no question that further research in the direction of admitting hydrogen in the form of "stripped" coal gas or blue water gas would be productive of some interesting information. Some process of this kind would, moreover, be particularly easy of application in gas-works generally.

The Deepest Gas Well in the World Is in West Virginia

During the last few years the Hope Natural Gas Company and the Peoples Natural Gas Company, both of Pittsburgh, Pa., have been drilling deep wells in northern West Virginia and southwestern Pennsylvania to find deeper oil-bearing and gas-bearing sands, their object being to reach, if possible, the horizon of the rich Clinton sand of Ohio, which, according to Dr. I. C. White, the State geologist of West Virginia, should be found in this region at depths between 7,000 and 8,,000 ft.

The first exceptionally deep well thus drilled, the R. A. Geary well, of the People's Natural Gas Company, is about four miles northwest of McDonald, Pa., and about twenty miles southwest of Pittsburgh. The mouth of the well is about 1,050 ft. above sea level. The wall penetrates the Gordon stray sand, the last of the usual gas sands in this region, at a depth of 1,971 ft. From this point to a depth of 6,700 ft. the strata penetrated are alternately "lime" and "slate," and from 6,700 ft. to the bottom, 7848 ft. they are "sand" and "lime" interspersed with about 60 ft. of rock salt.

The second deep well was drilled by the Hope Natural Gas Company on the farm of M. O. Goff, about eight miles northeast of Clarksburg, in northern West Virginia. Its mouth is 1,164 ft. above sea level. The well begins 200 ft. below the level of the Pittsburgh coal and penetrates the usual oil-bearing and gas-bearing sands, the lowest being the Bayard, which lies at a depth of 2,210 ft. The strata in the remainder of the well are alternately "lime" and "slate."

The third deep well, the J. H. Lake, of the Hope Natural Gas Company, is about eight miles southeast of Fairmount, W. Va. It is about twenty miles north of the Goff well and about sixty miles south of the Geary well. The mouth of the well is about 1,300 ft. above sea level. The Bayard sand, the lowest of the gas sands, was found in this well at a depth of 2,050 ft. The remaining strata are alternately "lime," "slate," and "sand."

Named in order of depth, the four deepest wells in the world are the Lake, 7,579 ft.; the Goff, 7,386; a well at Czuchow, Germany, 7,348; and the Geary, 7,248. The two deepest wells in the world are therefore the Lake and the Goff, the Lake surpassing the German well by the large margin of 231 ft. In comparison with these great depths, other depths reached by wells or mines sunk in the crust of the earth are rather insignificant. The deepest mine in the world is 5,200 ft.

The depth to which a mining shaft can be sunk is limited by the heat of the rocks, as the temperature at a depth of a mile in nearly all parts of the earth is so high that workmen cannot live in it, even with ventilation; but the depth to which a gas well six inches in diameter can be drilled seems to depend chiefly on skill

in drilling and strength of cable. The cable itself is heavy, and besides carrying its own weight and the weight of a drill, which weighs one or two tons, it must bear strains produced by vertical movements of the drill, which may be so great as to break it at any moment, so that the drill and a part of the cable may be lodged in the well in such a way that they cannot be removed. Exceptional skill is required, therefore, in operating the ponderous machinery used in drilling a well. The drill, which is a column of steel about five inches in diameter and 40 or 50 ft. long, beveled to a V-shaped edge at the lower end, is attached to one end of the cable, and at some other point, determined by the driller; the cable is attached to a long beam, which is operated in the same manner as the walking beam of a steamboat. Merely to lift the drill through the height determined by the length of the walking beam and then to let it drop repeatedly would do no drilling. In order to drill, oscillations must be induced in the cable, such as those set up by attaching a light weight to a suspended rubber band. A slight oscillation properly induced by the finger at the upper end of the rubber band will produce a very large oscillation of the weight attached to its lower end. In some such way as this the skilled driller produces oscillations in the drill bit, which throw the sharp beveled edge of the drill onto the rock with high velocity. The only means that the driller has of knowing the behavior of the drill is the general behavior of the machinery and the slight impulses or tremors in the cable, which he detects by his hand alone.

The information obtained from drill holes carried to great depths is of exceptional economic and scientific importance. Although the wells drilled by the Hope Natural Gas Company and the People's Natural Gas Company have not yet reached the goal sought—a depth of 8,000 ft.—they have, nevertheless come within 421 ft. of the goal, and incidentally they have established the fact that no valuable deposits of oil exist in the immediate vicinity of the wells at depths somewhat greater than 7,000 ft.

The materials and the conditions in the interior of the earth have long been a favorite subject of speculation among scientific men. According to the modern mathematical theory of the propagation of earthquake waves through the earth the outer rocky shell of the earth, which is about two and one-half times as heavy as water, extends to a depth of less than 1,000 miles. Inside of this shell is some material, probably metallic, which is more than five times as heavy as water. Estimates of the temperature at the center of this nucleus range from 3,000 to 180,000 deg Fahr., but these figures have little or no value, for mathematicians have not yet found the law of the distribution of temperature from the surface to the center of the earth. The temperature evidently increases with the depth, a fact again confirmed by an elaborate series of observations of temperature made in each of the three deep wells, the Geary, the Goff, and the Lake, by C. E. Van Orstrand, of the United States Geological Survey, Department of the Interior.

The temperature was 142.6 deg. Fahr. in the Geary well at a depth of 6,100 ft.; 159.3 deg. Fahr. in the Goff well at a depth of 7,310 ft., and 168.6 deg. Fahr. in the Lake well at a depth of 7,500 ft. The observation at a depth of 7,500 ft. in the Lake well was made at the deepest point yet reached by any observer.

Natural Gas Supply Failing in Niagara Field

The Provincial Natural Gas Company, of Bridgeburg, Ont., the principal distributer of natural gas in the Niagara district, has issued a general appeal to its consumers here not to use natural gas for heating purposes this coming winter.

Superintendent D. A. Coste, ranking official of the Provincial company, points out that natural gas can be used only for cooking purposes this coming winter, and also for water-heating purposes. It is pointed out that should consumers fail to obey the order the company will not be responsible for the unequal pressure that will follow and the shortage of gas.

Superintendent Coste declares that his company has spent thousands of dollars in an effort to locate new wells, but has had no success of any kind, and it is generally believed that in so far as the Niagara field is concerned none but the present wells will be available to supply consumers.

Formerly natural gas was used entirely by consumers for heating here; but this year they will have to rely on coal. For the last several winters it has been noticed that the pressure of natural gas was gradually failing. New wells have proved to be bloomers, and the available supply is gradually shortening. The gas company's appeal has been expected for some time.

Device Invented for Reducing Heating Power of Natural Gas to 600 B. t. u.

George Earl, superintendent of the sewerage and water board of New Orleans, La., while studying the problem of bringing natural gas to New Orleans at the lowest possible price invented a device which, it is reported, may make possible the bringing of gas to consumers in New Orleans at 65 cents per 1,000 cu. ft.

Mr. Earl's invention, in brief, makes possible the reducing of the heating power of natural gas from 1,000 B.t.u. to 600 B.t.u., the latter figure being the heating power of the present manufactured gas.

This reduction in the heating power makes it possible for the consumer to use the present gas fixtures for natural gas, and cuts the cost of the pipe line from $1,973,000 to $775,000.

The amount of $1,973,000 is the cost of building a 12-in. pipe line from the Terrebonne fields, which are believed to be the smallest pipe line that could supply the New Orleans demand.

By reducing the heating units of the natural gas, Mr. Earl declares that a pipe line of half the size first believed necessary will be ample to care for the city of New Orleans.

Using a 6-in. pipe line from the Terrebonne fields, says Mr. Earl, an entirely new system can be constructed at a cost of $9,766,500. That would give natural gas at 70 cents without tax and 87 cents with tax, and if the field failed, gas at $1.15 without tax and $1.30 with tax.

The First Gas Light in the U. S.

David Melville, of Newport, R. I., installed the first gas light in the United States in 1806. Baltimore was the first city to use it for lighting purposes successfully in 1817.

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Contents of This Issue

GETTING INTIMATE WITH THE PUBLIC—BY J. E. BULLARD 217

DEVICE FOR GAUGING CONSUMPTION OF GAS THROUGH BY-PASS VALVE..... 218

OXY-HYDROGEN GAS—ITS USES AT THE J. I. CASE THRESHING MACHINE COMPANY, MANUFACTURERS OF TRACTORS AND FARM IMPLEMENTS —BY CHARLES KANDEL..... 219

NEED OF LABOR SAVING PARAMOUNT FACTOR IN DESIGN OF NEW PLANT AT YPSILANTI, MICH.. 223

INCREASING THE AMMONIA YIELD..... 223

THE DEEPEST GAS WELL IN THE WORLD IS IN WEST VIRGINIA 225

NATURAL GAS SUPPLY FAILING IN NIAGARA FIELD. 226

DEVICE INVENTED FOR REDUCING HEATING POWER OF NATURAL GAS TO 600 B.T.U..... 226

EDITORIALS 227

MERCHANDISING GAS—THE CREDIT DEPARTMENT FAILS TO CO-OPERATE WITH PETERSON—BY S. G. ADDISON..... 229

FINAL PREPARATIONS FOR A. G. A. CONVENTION AND EXHIBITION 230

NEWS OF THE GAS INDUSTRY..... 234

As the Journal Views It

Thus We Learn from a Soldier

Major-General Leonard A. Wood, in his counsel to the Senate Military Affairs Committee Sept. 10, unconsciously dealt a blow to advocates of Government operation of utilities and any other business.

General Wood was, of course, discussing the army and its officers.

He approved the proposal of the War Department bill for the promotion of officers by selection instead of by seniority. But General Wood was timid. He would limit such promotions to 25 per cent. Why?

General Wood has been long in the atmosphere of the army and in the politics that surround it.

Of course, he would not oppose a 100 per cent of promotions by selection if he was confident of the impartiality of those who selected. Merit is the only basis on which any promotion should be made. But merit may be real or fictitious. General Wood evidently is not so certain that selections will not be based on the latter that he is willing to sacrifice that degree of inflexibility which will assure the officer without political affiliations his chance to go up regardless of the integrity of the official selectors.

The army is but one branch of Government control. Where Government is concerned politics are always intermixed. Under the best of administrations a friend at court, an ability to control votes or influences is too frequently of greater advantage than real ability and industry.

Such conditions have and do exist in private enterprise. But only infrequently. The private enterprise

must live by the annual earnings. They have to have enough men of real ability connected with them to produce the revenue on which the parasites might live, and also to pay a dividend to stockholders. As the difficulties of producing revenue become more and more numerous in modern enterprise, the number of parasites is steadily being ground down. In time they must inevitably be eliminated altogether.

When General Wood asserts that the army is the only walk of life in which a man cannot advance himself by his own individual effort, we feel that he is shortsighted. What about these superannuated Government clerks we sometimes see, these human machines with all initiative ground out of them, these human beings slipping down the other side of life, holding down jobs that in private enterprise are most largely filled by the immature and by untrained women? Have these people been given the chance to advance themselves by their own individual efforts?

Government jobs have always been regarded as sinecures, the refuge of weakly men who dread the competition of business life, who shudder at the possibility of a stoppage some time in the regular pittance. As it is as to the postal job, the army job in time of peace, etc., so it would be with the railway job, the gas works job and so forth. The virile man abhors a leash about his neck. He wants to forge ahead. He has confidence enough in his own ability to take the chance that some time there will not be the customary crust of bread in the family larder.

Divine Providence, guard us against Government operation of everything, if for no other reason, at least that our children may not be denied the thrill of life and of life's battles!

But to come back to General Wood.

He would have a system for the elimination of inefficient officers.

"There are many men in the army," he declares, "who are not cut out for military pursuits. They are a burden on the army. We must have some way of getting rid of them. Under the present laws this is exceedingly difficult."

As applied to the army or a Government undertaking, with its admixture of politics, we are in accord with the Senator who differed from the General. Fearing the elimination option might be too frequently used to get rid of real soldiers who might chance to "get in bad" with the powers that be for the moment, he would prefer to retain this difficulty, even though it does also protect the deadwood.

In private enterprise there is short shift for the incompetent. If it were otherwise it would be a short life for the enterprise.

Private enterprise must pay its way. Deadwood is death. Government enterprise is paid for in taxes. And seemingly there is no limit. The taxpayer is patient and he is of a non-inquiring temperament. Deadwood to him is a mere incidental.

The time will come when we cannot live on our land alone. We must go out in competition into the markets of the world. If we are shackled down, then by Government operation of everything we will starve.

Inefficiency cannot compete with efficiency and hope to survive.

That "New System" of Gas Supply

Whenever we warm up in any degree toward the idea of extending the number of dealers in gas appliances through co-operation of plumbers, etc., we come across a member of that misfit breed of humanity that our electric brethren shelter beneath their banners.

We were attracted by a well-assorted display of lighting fixtures and entered a shop. We were after a combination fixture for a living room.

Straight electric fixtures were all that was to be had. In our section had we been totally dependent on electric light we would have been in complete darkness three times within the last year. We voiced our timidity as to being totally dependent on so uncertain a thing and ventured the view that gas lighting from the illuminating standpoint was preferable.

What a harangue on the "new system" of gas supply we brought down on our heads.

Questioning revealed that our mentor was alluding to a change over from the candle-power standard. It was the last straw in the demoralization of gas lighting.

This ignorant man and his ignorant frothings might seem laughable to the gas lighting specialist. He is not, however, to the uninformed public. If his like is found frequent elsewhere and if this "new system" of supply has become a live talking point against gas lighting it should be taken into account and energetically combated. Otherwise, though an absurdly false teaching, it may work damage.

Valuation of Gas Companies Greatly Advanced This Year Over 1918

In the preliminary valuations for the year 1919 of the Madison (Wis.) Gas & Electric Company an increase of $500,000 was made. Hearings on the preliminary valuations of the gas and electric companies will be conducted before the tax commission during this month.

In thirty companies valued in the State of Wisconsin an increase of over $3,000,000 has been made over the valuation of last year. This was due to increased business, it is thought, and better conditions after the war. There have also been several new companies organized during 1919.

The Milwaukee Gas Light Company, with which the Madison Gas & Electric Company is connected, had its valuation increased by the tax commission $1,000,000, being valued at $15,500,000 this year.

The total assessed valuation of public utilities for 1919 is $33,840,700, as compared to $30,665,000 for 1918.

The Credit Department Fails to Co-operate with Peterson

By S. G. ADDISON

"Here I have worked for months to land this order and now the credit department wants me to demand an unreasonable deposit," complained Peterson's star salesman. "This concern has good credit, and the electric company will be glad to get their business without a deposit. It was very hard to convince them that they would find gas lighting satisfactory anyhow, and they are only half convinced that they should use gas for fuel in the kitchen. If I go back and tell them that their credit is not good with us and that we will have to have this $75 deposit before we go ahead they will simply cancel the order and this is really one of the best ones I have secured this year."

"Have you found out why the credit department demands this large deposit?" asked Peterson

A Bad Location

"Yes. The credit man tells me that this is a bad location, that the company has lost money on all the other tenants that have been in there. I asked him if it was a bad neighborhood and he told me it was not. The firms occupying the other stores pay promptly and their credit is good but the last three or four people who have occupied this store have not paid the company all that they owe them."

"Is this the reason why the credit department will not extend credit to this company?"

"I understand that it is. I could handle the order for the appliances all right, for if the credit department holds out for a deposit one of the dealers in town will be glad to accept the order. I can't get around the fact, however, that there is a deposit of $25 demanded before the gas meter is installed. They have already contracted for some electricity and the electric company installed the meter at once without demanding a deposit. You see this same concern is using electricity at another location but it is not using gas anywhere else. I expect that the credit man over at the electric light company is just as unreasonable as our man is. Occasionally I have been able to get business that their salesmen tell me I would not have been able to get if their credit man had not given it to me. But that doesn't help this case any. Just because this concern has never used gas before, and the last three or four people who occupied this store did not pay us promptly, I have got to lose the business after working as hard as I have to get it and after I have actually had it in my hands. I wish the credit man could have some experiences like this himself.

Lazy On Looking Up Data . .

"Can you tell me why a credit man should pass on all the credits without securing any information to amount to anything that is not already upon our books. I can understand that for small consumers it would not pay to spend much time and effort in looking upon credit ratings. For larger ones, however, it would pay. This case in particular seems foolish. If I should tell any of the salesmen for manufacturers and jobbers that this is the way we pass upon our credits they, either would not believe it, or they would laugh at the idea, and they tell me that their credit departments often give them trouble enough.

"If our credit man would go over and have a talk with these new people and talk things over with them, if he would then look up their past credit history I am sure that he would not think of asking for a meter deposit from them. But just because the company has already lost the limit at this particular address he will not do a thing about it. Is there anything that you can do?"

"I don't know as there is," replied Peterson, "but I will have a talk with the credit department and with the Old Man if necessary and see what I can do."

"I don't like to find fault and I don't like to knock my own company," continued the star salesman, "but if we could have a little more co-operation from our credit department we could get a good deal more business than we do.

"As I have already said I expect the electric light company's credit department is just about as bad as ours is but they have a system of rates that helps them a whole lot. If they do have a few customers turned down they don't have to worry. Their rates are so attractive that they can go out and get business that we can't touch. It seems that their rates have been designed to help the sales department and that our rate system is designed to make it easy for the bookkeeping department.

"The other day I was reading in *Printers' Ink* about a credit man that helps make sales rather than killing them. This credit man did not depend upon ratings, capital or anything else as much as he did upon the man who was asking for the credit. If, after he had talked to the man for a while he found that this man had promise, he would extend

him credit and then tell him how to operate his business in such a way as to make money. In most cases, so the article said, this credit man was right. He helped these men along with such good advice that most of them developed into very successful business men and exceedingly good customers.

"If one of his customers got behind in his accounts, he did not immediately cut off his credit the way we do by removing the gas meter. Instead, he first made a very thorough investigation and learned if there was not some way in which the customer could be pulled out of his trouble.

"Now, if our credit man had gone over to see the people who signed this contract and had talked things over with them he would have learned enough to show him that it would be safe to extend credit to them. He also has information in regard to the past history of the location that perhaps these people do not know and which it would be worth something for them to learn before they go ahead much farther. With this knowledge in hand they could shape their policy in such a way as to make it help them, where without it they may possibly make a few mistakes that will prove more or less costly."

"Have you made these suggestions to the credit man?" asked Peterson.

"No. I started to make some suggestions to him once but he did not take them in a very good spirit. He practically told me that, what he did in this department was none of my business, that my business was getting orders and that his was protecting the company by passing upon them. At that time he seemed to feel that his job was preventing any bad business getting onto the books of the company and that it was far better to turn down some good business than it was to make a mistake and let any bad business get onto the books."

"If that is his attitude, how do you explain the fact that at this location where you got this contract the last few occupants owe the gas company money?"

All a Part of Selling

"Oh! That was due to the fact that the credit man does not go out and look up these cases as carefully as he should. He based the size of the deposit that he demanded upon the amount of gas that had been used at that location before. You see there has been the same kind of a business there for some time but these last two or three concerns bought some extra appliances after the meter was installed and the gas company didn't know anything about them until after the gas was consumed. They bought them from a second-hand dealer and the consumption was a good deal higher than would have been the case if they had bought them from us."

"I see," said Peterson. "It looks to me as though the only successful way to handle the situation will be to have the credit department made a part of the sales department. If I can have that done then I will have the final say on credits and I will also be able to direct the policy of the department. Now that I am handling the advertising, we are getting better results than were gotten when the advertising department was not a part of the sales department. Don't you think so?"

"I most certainly do and I am sure that we would have no more trouble if the credit department could also be made a part of the sales department. Advertising, credit, and personal salesmanship are really a part of the sales work, just as the infantry, artillery and motor transport are all a part of the army and I can't see why they should not all be under one head."

Miss Helen L. Clark, B.S., in Home Economics, Connecticut Agricultural College, has been appointed instructor in the home economics department of the New Haven Gas Light Company of New Haven, Conn. The principal part of Miss Clark's work will be the instruction of the patrons of the company in the economical use of gas cooking appliances at the homes. This home tuition is appreciated by housewives and cooks and has been carried on for a number of years for the company by E. Miles Bradley.

Northern Illinois Company Filling Dealers' Orders for Coke

Fuel restrictions existing during the period of the war, having been removed, the Public Service Company of Northern Illinois, is selling gas house coke made at its stations in Kankakee, Ill., and Pontiac, Ill. Sales are made to dealers only—not private consumers. The latter's orders will be filled by the dealers.

Final Preparations for A. G. A. Convention and Exhibition

Daily Program of Convention

The work of association committees and of the headquarters staff in preparation for the First Annual Convention and Exhibition of the American Gas Association has been going ahead rapidly. On Sept. 12 each member received a copy of the "Official Informant and Guide"—a four-page folder printed in blue and brown on buff paper—which gives important facts and advance information about the spirit and activity of the gathering scheduled for Oct. 13 to Oct. 18 at the Hotel Pennsylvania in New York City.

Members of the association feel that they cannot emphasize too strongly the business character of the first convention and exhibition. For very many reasons, not all of which can be given a title and inserted in the program, every gas and manufacturing company member of the association should be officially represented at the meetings from Monday until Friday and every company in the industry should keep itself in touch with the transactions of the week. Active members from all sections of the country are expected and every man who can be spared from his ordinary duties will find his attendance at the convention and exhibition a benefit to himself, his company and the association.

(*The* American Gas Engineering Journal *will have in its Oct. 18th issue a complete record of each day's sessions of the convention.*)

Displays have been arranged and topics of discussion have been selected and assigned to speakers with an eye to the fact that the gas industry is made up of units whose investments vary from several thousands to several millions of dollars. The fundamental problems of these units are the same but their aspects may differ widely and prosperity for the industry depends to some degree upon the extent to which association activities take full cognizance of the problems and needs of both large and small units.

The state of the country added to the evolutions and revolutions in business methods and technical formulæ, brought about by war and rumors of war, has given the industry its quota of pressing problems and big issues which must be firmly faced

and wisely solved if it is to prosper to its fullest extent and realize its greatest possibilities. Detailed considerations of special commercial, technical, accounting and manufacturing problems present matters of special interest to the men engaged in each of these lines. The program as printed herewith promises success for the big plans with which the new association has started upon its career. Thirty of the papers and reports for the sectional sessions have already passed through the headquarters office and printed copies will be ready for distribution at the meetings for the convenience of all in attendance. No advance copies of general session papers and addresses will be distributed.

The Beal Medal

As announced previously, the Beal medal, awarded first in 1898 to Henry L. Doherty, will be offered as a mark of honor for the best paper on a technical gas subject presented at the convention. The committee which will decide the award consists of George B. Cortelyou, John B. Klumpp, Alfred E. Forstall, and William E. McKay.

The Exhibition

An interview with the secretary of the manufacturers' section brought out the fact that requests for exhibition spaces are still coming in. From an original plan for eighty-five booths, the exhibit has expanded until it contains over one hundred displays, among which will be found arrangements for the special demonstration of accounting methods and gas office labor saving devices. The exhibition will open at 10 a. m. on Monday morning and will remain open each day until 6 p. m.

Each booth has its number. These numbers refer to the exhibitors as listed below.

Manufacturers' Prize

The August *Monthly* of the American Gas Association contained an article in which a copy writer expressed his opinions concerning the value of exhibits and the fundamental principles that determine their success or failure. No gas man will be able to visit the booths of one hundred exhibitors without forming some opinions as to their good and bad points and coming to some conclusions as to their relative values, and the opinions of every gas man on the subject, what he likes in the exhibition and why he likes it, or what he deems dull, unconvincing, inartistic, and how it could be changed, are of such interest to the exhibitors and to the association at large, that the Manufacturers' Section is offering two prizes for the two best papers on the subject.

All contributions for this contest much reach headquarters by Nov. 20 and prize winners will be announced during December. An employee of a company member or an individual member of the association, registered at the convention may take part in the contest. Each paper should be limited in length to one thousand words and should be signed with the writer's name and address, his company's name, and his position in the company. The papers will, of course, give the bona fide impressions of the writer in his own words.

The prizes are a hundred-dollar Victory Loan note and a fifty-dollar Victory Loan note, awards worth trying for, in addition to the less tangible values which the man who visits the exhibit and then puts his impressions in writing, obtains for himself. The committee to act as judges are: secretary of manufacturers' section, assistant secretary-manager of the association and the associate editor of the American Gas Association *Monthly*.

The exhibition hall is located on the Thirty-second street side of the Hotel Pennsylvania and forms a part of the ballroom floor, a large section of which has been turned over by the courtesy of the hotel management, to the association for its exclusive use during the convention.

General Services

A registration and information desk will be maintained on the Thirty-third Street side of the floor. All members who register on their arrival, will get their mail at this registration desk and will use it as a center of communication for answering telephone calls or keeping appointments.

The attendants at the information desk will be prepareld to direct visitors to various points of the city and to places of interest as well as answer questions concerning convention matters.

Parties for the sightseeing tour through the Hotel Pennsylvania or to the other hotels of New York will be made up at the information desk.

Entertainment

The committee on entertainment, after considering the business purpose of the convention and the wealth of recreation offered by New York to both its old friends and its new guests, has decided upon two functions as the expression of the association's festive spirit.

On Monday evening, the president's reception will be followed by a dance and a buffet supper for which tickets may be secured at $2 per person. On Wednesday evening, the annual banquet will be held. A number of prominent artists will entertain and dancing will follow. For this occasion the tickets are $6.50 per person.

A combination ticket admitting its holder to the entertainments of both evenings can be secured at $7.50 per person.

The committee is urging all who expect to take part in these functions to notify headquarters at once and to forward checks and to obtain tickets immediately.

Hotel Accommodations

As has been said before, our members and guests will find that every personal comfort is served and special convenience in attending to convention business is acquired by their residence in the Hotel Pennsylvania, convention headquarters, during the time of their stay in the city.

The hotel management has already made some one hundred and fifty reservations for association members and in view of the abnormal number of people who pass through New York in the early fall, the association cannot urge too strongly the wisdom of making hotel arrangements at once. Hotel Pennsylvania quotes the following rates for rooms: Rooms with double bed (for one), $4, $5 and $6; rooms with double bed (for two), $5, $6 and $7; rooms with twin beds (for one or two), $6, $7 and $8; parlor suites, $12 up.

Arrangements Complete

The American Gas Association headquarters and committees have made every effort to complete all arrangements conducive to the comfort and convenience for its members attending the convention, as well as all matters pertaining to the carrying through of an interesting and valuable program. There is every reason why each man who expects to attend

should make definite reservations at the hotel for the accommodation of himself and his party, and at association headquarters for his place at the banquet and the buffet supper. When such details have been taken care of, the American Gas Association reports that it shall be all ready to meet its friends, discuss problems and prepare for participation in a convention which it believes will give new points of view to every man present, new vitality to the industry as a whole and a new meaning to that word "co-operation" whereby the allied interests of the industry and the association can hope to win for the gas industry its rightful place in American enterprise.

LET'S GO.

General and Executive Sessions

General Session: Tuesday Morning, Ten O'Clock—

Meeting called to order and opening remarks—George B. Cortelyou, president.

Report of membership committee and election of active members—R. R. Young, chairman.

Report of secretary-manager—Oscar H. Fogg.

Report of treasurer—William H. Barthold.

Address of the president—George B. Cortelyou.

Amendments to constitution and by-laws—William J. Clark, chairman.

Report of nominating committee and election of officers—C. A. Munroe, chairman.

Paper, "What Are the Needs of the Gas Industry?"—Henry L. Doherty.

Reports of committees—Accident prevention, James B. Douglas, chairman; calorific standards, J. B. Klumpp, chairman; educational, Walton Clark, chairman; national committee on gas and electric service, William H. Gartley, chairman; membership in the Chamber of Commerce of the United States, Captain William E. McKay, councilor.

Executive Session (only company member delegates attending)—

Election of company members.

Election of directors.

Election of 1920 nominating committee.

General Session: Wednesday Morning, Ten O'Clock—

Paper, "Creating a Market for Utility Securities"—F. H. Sisson, vice-president Guaranty Trust Company, New York, N. Y.

Paper, "The Unsold Market for Gas"—C. A. Munroe, vice-president Peoples Gas Light & Coke Company, Chicago, Ill.

General Session: Thursday Morning, Ten O'Clock—

Paper, "Influence of Publicity in Establishing Relations Between Utilities and the Public"—N. C. Kingsbury, vice-president American Telephone & Telegraph Company, New York, N. Y.

Report of plan and scope committee of the advertising section—B. J. Mullaney, chairman.

Paper, "The Value of the Chemist to the Gas Industry as a Whole Through Research Work and the Development of By-Products"—William H. Gartley, engineer, United Gas Improvement Company, Philadelphia, Pa.

Report of committee on president's address.

Closing remarks.

Manufacturers' Section Sessions

Tuesday Afternoon, Two O'Clock—

Address of the section chairman—A. P. Brill.

Report of nominating committee and election of officers—William H. Crane, chairman.

Report of committees—Exhibition, A. P. Brill, chairman; members, A. P. Brill, chairman.

Discussion—What activities the section could engage in to be of more value to the members and the association.

Wednesday Afternoon, Two O'Clock—

Paper, "The Unsold Market for Gas"—C. E. Bartlett, Bartlett & Co., Inc., Philadelphia, Pa.

Thursday Afternoon, Two O'Clock—

Paper, "Factory Costs and Overhead"—F. E. Seeley, Abendroth Bros., Port Chester, N. Y.

Commercial Section Sessions

Tuesday Afternoon, Two O'Clock—

Address of the section chairman—E. N. Wrightington.

Report of nominating committee and election of officers—William J. Clark, chairman.

Report of sales development committee—James P. Hanlan, chairman: "Sales Campaigns," H. K. Dodson, sub-chairman; "Filling in the Valleys in Gas and Appliance Sales," William Gould, sub-chairman; "Basis for Arriving at New Business Costs and Proper Method to Determine Sales Prices of Appliances and Jobbing Work," A. P. Post, sub-chairman; "Compensation of and Selecting and Training Sales Representatives," H. S. Christman, sub-chairman; "Manufacturers," Harry W. Hunter, sub-chairman; "Appliance Maintenance," J. C. D. Clark, sub-chairman; "Relations Between Selling and Installation Departments," G. I. Vincent, sub-chairman; "Ways and Means to Make Non-Profitable Consumers Profitable," B. H. Jardine, sub-chairman.

Wednesday Afternoon, Two O'Clock—

Paper, "Merchandising"—M. C. Robins, president Progressive Age Publishing Company, New York, N. Y.

Paper, "Radiant Heat"—Dr. Clayton H. Sharp, Electrical Testing Laboratories, New York, N. Y.

Reports of committees—Heating, Geo. S. Barrows, chairman; relations with architects, builders and contractors, R. S. Doull, chairman; illumination, C. O. Bond, chairman.

Thursday Afternoon, Two O'Clock—

Report of industrial fuel committee—Thomas King, chairman: "Improvement of Atmospheric Burners," Jerome Brandes, sub-chairman; "Proportional Mixing," Thomas King, sub-chairman.

Friday Morning, Ten O'Clock—

Paper, "Getting and Keeping the Hotel Business"—R. V. Howes, Consolidated Gas Company, New York, N. Y.

Reports of sub-committees of the industrial fuel committee: "Furnace Performance Standards," I. Lundgaard, sub-chairman; "Unit Cost Data," H. Vittinghoff, sub-chairman.

Technical Section Sessions

Tuesday Afternoon, Two O'Clock—

Address of the section chairman—J. B. Klumpp.

Report of nominating committee and election of officers—George T. Macbeth, chairman.

Reports of committees—"Carbonization," James A. Brown, chairman; "Consumers' Meters," Geo. Wehrle, chairman.

Paper, "Progress to Date on Steaming Retorts—All Types"—L. J. Willien, Jr., Charles H. Tanney & Company, Boston, Mass.

Paper, "A Sampling Device for the Investigation of Water Gas Operation"—R. A. Carter, Jr., Consolidated Gas Company of New York, New York, N. Y.

Paper, "Revivification in Place"—O. B. Evans, United Gas Improvement Company, Philadelphia, Pa.

Wednesday Afternoon, Two O'Clock—

Reports of committees—"Cast Iron Pipe Joints," G. I. Vincent, chairman; "Cast Iron Pipe Standards," Walton Forstall, chairman; "Refractory Materials," H. L. Underhill, chairman: "Disposal of Waste from Gas Plants," L. J. Willien, Jr., chairman.

Paper, "The By-Product Coke Oven and Its Place in the Gas Industry"—A. H. Harris, Jr., Coal Products Manufacturing Company, Joliet, Ill.

Paper, "Regulating Pressures from Transmission or Pumping Mains into Distribution Mains"—George T. Macbeth, Westchester Lighting Company, Mount Vernon, N. Y.

Thursday Afternoon, Two O'Clock—

Reports of committees—"Electrolysis," J. D. von Maur, chairman; "Chemical," E. C. Uhlig, chairman.

Paper, "Dust Deposits in Mains and Services"—Charles R. Henderson, Washtenaw Gas Company, Ann Arbor, Mich.

Paper, "A New Heating Value Indicator"—E. J. Brady, United Gas Improvement Company, Philadelphia, Pa.

Topics for discussion: "The Value of the Chemist in the Large Gas Plant" R. J. Murphy, Brooklyn Union Gas Company, Brooklyn, N. Y. "The Need and Value of the Chemist in the Small Gas Plant"—H. Vittinghoff, Stone & Wobarter, Boston, Mass.

ACCOUNTING SECTION SESSIONS

Tuesday Afternoon, Two O'Clock—

Address of the section chairman—Halford Erickson.

Report of nominating committee and election of officers—H. M. Brundage, chairman.

Report of committee on uniform classification of gas accounts—R. A. Carter, chairman.

Wednesday Afternoon, Two O'Clock—

Report of committee on office labor-saving devices—John L. Conover, chairman.

Paper, "Merchandising Accounting"—W. A. Sauer, Peoples Gas Light & Coke Company, Chicago, Ill.

Thursday Afternoon, Two O'Clock—

Paper, "Bookkeeping Without Books"—H. B. Lehmeyer, Consolidated Gas, Electric Light & Power Company, Baltimore, Md.

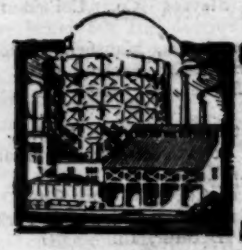
ALLOTMENT OF SPACES BY EXHIBITION COMMITTEE

(*Numbers correspond to positions of booths assigned.*)

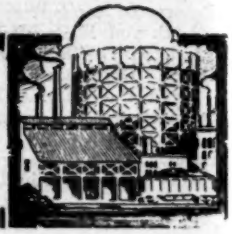
No.

1. Metric Metal Works, Erie, Pa.
2. Reznor Mfg. Co., Mercer, Pa.
3. Geist Mfg. Co., Atlantic City, N. J.
4. Celite Products Co., New York City.
5. Mead Gas Heater Co., Delawanna, N. J.
6. Crandall Pettee Co., New York City.
7. Safety Gas Lighter Co., Haverhill, Mass.
8. Cleveland Heater Co., Cleveland, Ohio.
9. New Process Stove Co. Div. (Amer. S. C.), Cleveland, Ohio.
10. C M. Kemp Mfg Co., Baltimore, Md.
11. Union Stove Works, New York City.
12. Young Bros. Co., Detroit, Mich
13. Reliable Stove Co. Div. (Amer. S. C.), Cleveland, Ohio.
14. Hoffman Heater Co., Lorain, Ohio.
15. James B. Clow & Sons, Chicago, Ill.
16. Weir Stove Co., Taunton, Mass.
17. National Tube Co., Pittsburgh, Pa.
18. Wm. Kane Mfg. Co., Philadelphia, Pa.
19. American Meter Co., New York City.
20. Long-Landreth-Schneider Co., New Brunswick, N. J.
21. General Gas Light Co., New York City and Kalamazoo, Mich.
22. Roberts & Mander Stove Co., Philadelphia, Pa.
23. Sprague Meter Co., Bridgeport, Conn.
24. Shapiro & Aronson, Inc., New York City.
25. Peninsular Stove Co., Detroit, Mich.
26. Pittsburgh Water Heater Co., Pittsburgh, Pa.
27. Surface Combustion Co., New York City.
28. G. S. Blodgett Co., Inc., Burlington, Vt.
29. John J. Griffin & Co., Philadelphia, Pa.
30. Eclipse Gas Stove Co., Rockford, Ill.
31. Humphrey Co., Kalamazoo, Mich.
32. Estate Stove Co., Hamilton, Ohio.
33. General Fire Extinguisher Co., Providence, R. I.
34. Superior Meter Co., Brooklyn, N. Y.
35. George M. Clark & Co. Div. (Amer. S. C.), Chicago, Ill.
36. Ruud Mfg. Co., Pittsburgh, Pa.
37. Bryant Heater & Mfg. Co., Cleveland, Ohio.
38. Lovekin Water Heater Co., Philadelphia, Pa.
39. Michigan Stove Co., Detroit, Mich.
40. Union Steel Products Co., Ltd., Albion, Mich.
41. Erie Stove & Mfg. Co., Erie, Pa.
42. Meek Oven Mfg. Co., New York City.
43. General Gas Appliance Co., New York City.
44. Baltimore Gas Appl. & Mfg. Co., Baltimore, Md.
45. F. W. Ofeldt & Sons, Nyack, N. Y.
46. Detroit Stove Works, Detroit, Mich.
47. Improved Appliance Co., Brooklyn, N. Y.
48. Rathbone Sard & Co., Albany, N. Y., and Aurora, Ill.
49. Welsbach Co., Gloucester, N. J.
50. William M. Crane Co., New York City.
51. Strause Gas Iron Co., Philadelphia, Pa.
52. Illinois Specialty Mfg. Co., Bloomington, Ill.
53. A. H. Wolff Gas Rad. Co., New York City.
54. Lawson Mfg. Co., Pittsburgh, Pa.
55. B. Ryan & Co., New York City.
56. Minneapolis Heat Regulator Co., Minneapolis, Minn.
57. Maxon-Premix Burner Co., Muncie, Ind.
58. Bartlett-Hayward Co., Baltimore, Md.
59. Lindsay Light Co., Chicago, Ill., and New York City.
60. Equitable Meter Co., Pittsburgh, Pa.
61. General Briquetting Co., New York City.
62. Roberts Brass Mfg. Co., Detroit, Mich.
63. Lattimer Stevens Co., Columbus, Ohio.
64. Eclipse Stove Co., Mansfield, Ohio.
65. Bailey Meter Co., Cleveland, Ohio.
66. W. W. Barnes Co., East Orange, N. J.
67. Isbell-Porter Co., Newark, N. J.
68. Connelly Iron Sponge & Governor Co., New York City.
69. United Lead Co., New York City.
70. H. Mueller Mfg. Co., New York City and Decatur, Ill.
71. The Gas Industry, Buffalo, N. Y.
72. Abram Cox Stove Co., Philadelphia, Pa.
73. Gehnrich Indirect Heat Oven Co., Inc., Brooklyn, N. Y.
74. Cutler-Hammer Mfg. Co., Milwaukee, Wis.
75. *The Gas Age*, New York City.
76. Quick Meal Stove Co. Div. (Amer. S. C.), St. Louis, Mo.
77. *The Gas Record*, Chicago, Ill.
78. Salas Co., New York City.
79. Quigley Furnace Specialties Co., Inc., New York City.
80. Dangler Stove Co. Div. (Amer. S. C.), St. Louis, Mo.
81. AMERICAN GAS ENGINEERING JOURNAL, New York City.
82. Republic Flow Meters Co., Chicago, Ill.
83. J. B. Slattery & Bro., Brooklyn, N. Y.
84. Claus Automatic Gas Cock Co., Milwaukee, Wis.
85. Precision Instrument Co., Detroit, Mich.
86. A-B Stove Co., Battle Creek, Mich.
87. National Stove Co. Div. (Amer. S. C.), Lorain, Ohio.
88. Milwaukee Gas Specialty Co., Milwaukee, Wis.
89. Comstock-Castle Stove Co., Quincy, Ill.
90. Perfect Combustion Co., Chicago, Ill.
91. ———
92. Underwood Typewriter Co., Inc., New York City.
93. Underwood Typewriter Co., Inc., New York City.
94. ———
95. Elliott Fisher Co., Harrisburg, Pa.
96. Kalamazoo Loose Leaf Binder Co., Kalamazoo, Mich.
97. Addressograph Co., Chicago, Ill.
98. Rand Co., North Tonawanda, N. Y.
99. Rand Co., North Tonawanda, N. Y.
100. Monroe Calculating Machine Co., New York City.
101. Library Bureau, Boston, Mass.
102. ———
103. Burroughs Adding Machine Co., Detroit, Mich.
104. Burroughs Adding Machine Co., Detroit, Mich.
105. A. G. A. Accounting Section.

CONSOLIDATED GAS, ELECTRIC LIGHT & POWER COMPANY, of Baltimore, declared the regular quarterly dividend of 2 per cent on the common stock, payable Oct. 1 to stock of record Sept. 15.



NEWS OF THE GAS INDUSTRY



Gas Purification Is Being Investigated

Purpose of Inquiry Is to Furnish Information to the Gas Industry

The Illinois Geological Survey, the University of Illinois and the United States Bureau of Mines all co-operating are making a study of gas purification conditions in the plants of the State of Illinois with a view to the possibility of rendering some assistance where needed. The present purification process with iron oxide has been in use more than thirty years though there is considerable difference in its practice and in the results obtained. Official representatives are visiting typical plants carrying out tests and examining oxide. Conditions at particular plants will not be made public but a bulletin will be issued giving the results of the research. The observations and the subsequent laboratory studies, it is believed, will be exceedingly useful to the interests of the gas industry.

The work is part merely of the co-operative gas work planned by the Federal and State organizations named.

Sunbury Company's New Rate Tariff Effective Sept. 15

The Northumberland County Gas & Electric Company, operating in Sunbury, Northumberland County, Pa., and vicinity, has filed a new tariff of rates governing the distribution of manufactured gas. The new tariff becomes effective on September 15, 1919, and makes the following increases in existing rates:

Under the new schedule the charge per 1,000 cu. ft. is increased by an amount ranging from nothing for small quantities to 10.6 cents for large quantities. Under Gas Rate Schedule "B 1," customers whose monthly consumption averages not more than 10,000 cu. ft. shall pay a minimum monthly charge of 75 cents; customers having a large consumption shall pay an increased minimum charge based upon the additional investment required to render service.

Coal Dealers at Worcester, Mass., Plan to Handle Gas Company's Coke

Worcester coal dealers will distribute the coke produced by the Worcester Gas Light Company in the manufacture of gas. The company has 20,000 chaldrons of coke on hand. Already 5,000 chaldrons have been set aside for one Worcester coal dealer, and it is understood other dealers will make some similar arrangement.

Coke has been handled in a small way by coal dealers in past years, but usually only for the convenience of customers who demanded it. Much of this fuel is used in Worcester, but the great bulk of it is disposed of direct by the gas company, which will continue its sale.

The dealers undertake to sell coke at the same price as the gas company, which at present is $8 a chaldron.

Many people burn it in their heating boilers and furnaces and in cook stoves. It is sold by measure rather than by weight, because it absorbs moisture and as a consequence there may be considerable variation in its weight.

The gas company figured that with anthracite coal at the present price in Worcester, $12.90 a ton, an equivalent amount of coke, reckoned for heat produced, costs about $10.

The purpose of the coal dealers in going into this branch of the fuel business is preparedness against the winter's supply. They fear a shortage of coal. Coke will eke out the supply in a large way.

THE NORTH TEXAS GAS COMPANY has been granted a franchise to extend pipe lines over the streets of the city of Cleburne, Tex. It is thought the consumers will be able to get natural gas connections early in the new year.

State Commission Issues Order Providing for 10 Per Cent Return

The State Corporation Commission of Oklahoma has issued an order granting permission to the Oklahoma Natural Gas Company to increase its rates for gas to a maximum of 40 cents net per 1,000 for the first 100,000 cu. ft.; 32 cents per 1,000 for the next 400,000 cu. ft. and 25 cents per 1,000 for all in excess of 500,000 cu. ft.

The order further provides that the company be allowed 10 per cent return on the investment and be permitted to set aside a depreciation and amortization of 10 per cent, and should there be an excess, this excess must set up as a surplus to take care of necessary extensions and lean periods. When necessary to use this fund for other purposes than specified an interest of 10 per cent must be credited to this fund.

Pacific Gas & Electric Company, Third Largest Utility in U. S., Sold Over Nine Billion Cu. Ft. in 1918

Gross earnings for 1918 were $23,105,718, more than three times as large as those of any other similar public utility in the State of California.

The Southern California Edison Company, its nearest competitor, had gross earnings for the same year, including those of the Pacific Light & Power Corporation, of $8,735,458; while the Los Angeles Gas & Electric Company, the third largest company in the State, had gross earnings of $4,973,022.

Gas sold in 1918 amounted to 9,255,960,600 cu. ft.

The Pacific Gas & Electric Company is the third largest public utility of its kind in the United States, being exceeded only by the Consolidated Gas Company of New York and the Commonwealth Edison of Chicago. It serves 477,012 consum-

ers in 178 cities and towns of thirty-two counties in Central California, an area of 37,775 square miles, which is equal to the combined areas of Connecticut, Delaware, Massachusetts, New Jersey, Rhode Island and Vermont.

Nearly every investor, bank and investing institution in California is interested in the company as a holder of its bonds or preferred stock. There are at present 6,694 preferred stockholders, 2,317 common stockholders and thousands of bondholders.

The credit of the company is very strong and its securities are most favorably regarded.

During the last thirteen years the investment position of its bonds and preferred stock has been fortified by the reinvestment of more than $34,000,000 from the surplus earnings. It has always pursued a most conservative policy and has set aside ample sums for maintenance and depreciation. This means that its properties have always been kept in excellent operating condition.

New Massachusetts Commission to Be Appointed in December—General Schaff Member for 25 Years

A new State board of gas and electric light commissions will be appointed by Governor Coolidge of Massachusetts on Dec. 31 of this year, when the present body will pass out of existence as a separate body. The new commission will consist of five members, and will be appointed for one, two, three four and five years, respectively.

Gen. Morris Schaff, of Springfield, Mass., has been a member of the Massachusetts State Board of Gas and Electric Light Commissions for the past twenty-five years. Public sentiment strongly tends toward the hope that the Governor will reappoint General Schaff for one of the terms, because it is said that in his continuous service he has done much toward shaping sound and careful policies and that at a recent meeting held in Springfield General Schaff clearly demonstrated his acute grasp of conditions, his judgment and his usefulness.

BOSTON CONSOLIDATED GAS COMPANY'S output for August was 453,459,000 cu. ft., an increase of 4.6 per cent compared with the corresponding month a year ago.

Decline in Fuel Prices—San Antonio Company Contemplating Rate Reduction

Owing to a decline in the price of fuel oil, E. H. Kifer, general manager of the San Antonio Public Service Company of San Antonio, Tex., has made announcement that his company is contemplating a reduction in its gas rates within the next two months.

Fixing new rates on gas is taken up at this time, Mr. Kifer said, in view of the expiration in October of the agreement which was made with the city of San Antonio last October to increase such charges to meet the heavy expense of operation during the war.

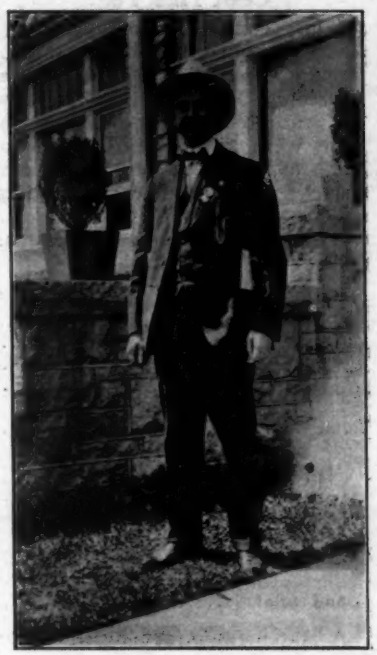
"Our present high rates on fuel contracts have not expired yet, and we still have about two months time limit on the agreement with the city," Mr. Kifer stated, "but in the meantime we are taking up the matter of rearranging our rates. Of course, the question has not been discussed at length and there is little definite information to be given out just yet. It is understood that the city of San Antonio has taken the matter of lower rates up with the public service company.

40 Cent Net Rate in Effect in Oklahoma

An order making a net rate of 40 cents a thousand for domestic consumption and 25 cents minimum for industrial gas has been prepared by the corporation commission for the Oklahoma Natural Gas Company, which will affect about forty towns in the State of Oklahoma. The new rate went into effect on Sept. 1 and applies to business of this month. Members of the commission said the order would be surrounded with authority from the commission to change it if the supply of gas is found inadequate at any time.

The order is simply complying with an order of about a year ago allowing an increase in gas rates and providing an additional increase when certain conditions were complied with. That was the securing of an increased supply of gas. The Oklahoma Natural Gas Company has shown to the satisfaction of the commission that this supply has been obtained and the 40-25 cent rate is a fulfillment of the old order.

The New President of the Canadian Gas Association



V. S. MC INTYRE

Laclede Company and Missouri Public Utilities in General Protesting State Commission's Tax Ruling

The Laclede Gas Light Company of St. Louis, among other Missouri public utility corporations is protesting the recent ruling of the State Tax Commission that the assets of corporations are taxable without allowance for debts or liabilities. Attorneys for the Laclede company contend that the tax should be levied against the capital stock and surplus and that there is no provision in the law for levying against the gross assets.

It is understood that several suits will be instituted contesting the authority of the State of Missouri to levy the tax upon gross receipts. The present application of the law last year netted the State $1,200,000 in taxes. The tax, which was originally three-fortieths of one per cent, was raised to one-tenth of 1 per cent and the tax will be collected on that basis next year.

THE KAY COUNTY GAS COMPANY stockholders voted to set aside 1,000,000 shares of the company's stock to be sold to employees at par, $1.

Earnings Available for Dividends Decreased 55 22 Per Cent This Year

The combined net earnings available for dividends of the subsidiary companies of the Massachusetts Gas Companies for July, the first month of the current fiscal year, were $201,650, a decrease of $248,708, or 55.22 per cent, compared with the corresponding month a year ago.

The July earnings compare as follows:

	1919	1918	1917
Gas Department:			
Boston	$58,270	$82,097	$89,388
East Boston	1,135	4,631	7,040
Quincy	8,425	7,918	5,489
Newton	701	3,687	4,295
Total	$68,564	$98,335	$106,205
Coal Department:			
New England coal	5,695	42,241	28,518
New England Fuel & Transportation	127,391	307,963	365,275
Total	$133,086	$350,205	$393,793
Grand total	$201,650	$448,540	$499,998

A statement issued by the company says:

"The net earnings for July, while unsatisfactory, should be no surprise to anyone familiar with the conditions that have existed in the recent past in the fuel and transportation business. Unless some unforeseen disaster happens the companies belonging to the Massachusetts Gas engaged in commercial enterprise will show an improvement commencing with August as compared with July. All the ships belonging to the New England Fuel & Transportation Company will be in commission and working on a satisfactory basis by Sept. 1.

"During September we expect to ship about 20,000 tons of coal from our No. 3 mine on the Empire property, which we have been developing for somewhat over a year and from which we made the first shipments in August. The mine, which is just becoming a producer, is expected to prove to be one of the best in the country. The coal is from the Pittsburgh seam, which, on this particular property, has a thickness of approximately 10 ft. of merchantable coal, and the cost of production should be very low in comparison with the cost at other mines."

Company Granted $2.00 Rate

At the regular monthly meeting of the city council, of Georgetown, Ky., permission was given the Georgetown Water, Gas, Electric Light & Power Company to raise the price of gas from $1.50 a 1,000 cu. ft. to $2 a 1,000 cu. ft. and the minimum fee from 50 cents to $1. The company had announced that owing to the high price of material and labor it would be forced to discontinue the manufacture of gas unless the raise was permitted.

Entire Gas Supply Leaked Away in Night

As a result of one of the big gas mains of the Mountain States Power Company breaking, operating in North Bend, Ore., the entire supply from the big tanks escaped and left gas users without gas the next morning. Many thousand feet of gas escaped and as a result the mains were all empty the next morning. It took several hours to get the plant going to meet the loss.

The company had difficulty in finding the leak, but by extra work, sufficient gas was pumped in to supply the users despite the loss.

Natural Dome of Gas Between Alabama and Tennessee

The Florence-Sheffield Oil & Gas Company, of Florence, Ala., of which F. B. Grindell is president and J. P. Lee, of Sheffield, secretary, has begun drilling for gas just outside of the city of Florence.

Major Elliott, an authority on the geological formation of Alabama, has stated that there is a natural dome, containing both gas and oil, between Florence, Ala., and Iron City, Tenn. The promoters of the company believe they will get natural gas in quantities that will make its marketing profitable.

Illinois Gas Association Organizing to Meet Problems Arising in Operation of Plants

The Illinois Gas Association has completed an organization for the purpose of rendering assistance to its members in finding solutions to problems arising in the operation of their plants. The association is co-operating in the work with the University of Illinois, and the facilities of the university laboratories will be utilized.

It has been arranged that problems requiring no special study will be answered by the Special Committee of the Bureau of Information. The members of this committee are R. B. Harper, superintendent of the laboratory of the People's Gas Light & Coke Company, and H. H. Clark, secretary of the Illinois Gas Association.

Whenever further investigation is found necessary the question will be referred to S. W. Parr, professor of Applied Chemistry at the University of Illinois. Under the direction of Professor Parr will work the two incumbents of the Research Graduate Assistantships in Gas Engineering maintained by the association.

Present indications point to a general use of the new facilities by the members of the association. Secretary Clark has mailed notifications of the establishment of the organization to all members of the association.

Long Term Lease Ratified for Chambersburg, Pa.

At a meeting of the stockholders of the Chambersburg (Pa.) Gas Company a lease for a long term of years with the associated gas company, holding a charter for practically all of the townships surrounding Chambersburg, Pa., was ratified. It is the purpose of the Chambersburg Gas Company to greatly extend its system.

Oil and Gas Discovered in Oregon

Oil and gas are reported to have been struck in the Harney Valley of southeastern Oregon, although in small volumes. A flow of gas from a well 1,200 ft. deep has been struck by Swift & Co., Chicago, on its property five miles from Narrows, Ore., and a small quantity of oil was found.

A. Gordon King, Formerly Assistant Engineer to Col. Fogg, Now on State Commission

A. Gordon King, recently appointed gas engineer for the Public Service Commission, Second District, State of New York, qualified at the civil service examination held in June as number one on the eligible list with an average standing of 96.68 per cent.

Mr. King was honorably discharged from the United States Army as first lieutenant, chemical warfare service in April, after serving at Washington, Lakehurst Proving Grounds and at Amatol Arsenal. He had had previous military experience with the New York National Guard, served on the Mexican border with the New York Signal Corps and was recently commissioned captain in the ordnance section of the Reserve Corps. He resigned from the army to accept the post of engineer with the Selas Company, gas fuel engineers, of New York. Prior to being called to active duty he was with the Consolidated Gas Company of New York for over four years as one of Colonel Fogg's assistant engineers.

Mr. King is a son of Arthur King, general manager of the Gravesend Water Company; he was educated and trained for the gas industry in England, and after leaving technical school served three years as an articled pupil with the Gravesend Gas Company. He has had over fifteen years broad experience in England, Canada and the United States in all branches of the gas industry. He holds the full technological certificate of the City and Guilds of London Institute, honors grade, in gas manufacture and allied subjects, as well as the honors grade certificate and prize of the Regent Street, London, Polytechnic in gas manufacture.

Oakdale Company Operating at Loss—Petitions Increase

Formal application for an increase in gas rates in Oakdale, Cal., has been made to the California Railroad Commission by the Oakdale Gas Company. G. W. Anderson, manager of the company, claims that for the past six months he has operated the company at a loss. The minimum rate here now is $1.70, representing an increase of 20 cents per 1,000 ft. during the past year, granted by the commission. This was but half the increase asked by the company, and the commission is requested now to allow a similar increase.

A Gordon King

New Type of Enameling Furnace Fired with Manufactured Gas

A new type of enameling oven in which heat quality is supplied by manufactured gas is being installed in several industrial plants in the Chicago district which are large users of industrial gas. The appearance of the gas furnace in the factories of this section marks the revolutionizing of the old coal burning methods employed in the process of enameling. Although natural gas has been used successfully in certain districts the installation of the gas enameling furnaces is said to be the first case in which manufactured gas is used to secure the necessary heat. Enameling requires a temperature of 1,800 deg. Fahr.

The new furnace is said to expedite the process of enameling, and to turn out a finished product of a quality superior to that produced by the coal furnace. In construction it is 12 ft. long, 3 ft. high and 4 ft. wide. It is of large muffled type and in appearance suggests a tunnel. Gas is burned immediately below the oven, the heat premeating the oven through the outer skin. The articles treated in the furnaces are chiefly stove trimmings and kitchen utensils.

Considerable floor space is saved by the new type of furnace; the gas type occupies approximately one-half the floor space.

Manufactured Gas Used in More Than Twenty Processes in One Plant

One of the large plants in the industrial district south of Chicago uses manufactured gas for more than twenty distinct processes.

In one department of the plant, which is now increasing its production, manufactured gas is employed in a forge for heating steel blanks in the operation of rolling them into steel car wheels. Three steps in this process have been changed so as to substitute gas fuel for soft coal in furnishing heat treatment. One of the interesting results of the change in the process is that the gas turns out clanks faster than the capacity of the press to absorb them.

Another manufactured gas substitution in an industrial process of the plant is that in shop tests of completed motors in the motor department, where gasoline was formerly utilized. The efficiency of ordinary manufactured gas was established with the result of a $2,000 decrease per month in the expenditure for that portion of the work of the department.

Earnings of Subsidiary Companies of American Public Utilities

In the recent report of the American Public Utilities Company, at Grand Rapids, Mich., to the board of directors a comparative statement of gross earnings of two of the company's subsidiaries, the Utah Gas & Coke Company and the Boise (Idaho) Gaslight & Coke Company, is given. The Utah Gas & Coke Company receipts show for 1916, $323,477.23; 1917, $344,543.19; 1918, $378,124.72; 1919, $433,499.82. The report states that the gross earnings of the company show an increase of $55,375.10, and that the physical condition of the property has been well maintained. Application is about to be made for further increase in rates.

The Boise Gaslight & Coke Company makes the following exhibit: 1916, $58,968.92; 1917, $59,889.07; 1918, $63,935.37; 1919, $72,418.47. The report states that the gross earnings of the property showed an increase of 13.3 per cent, while net earnings were 38.8 per cent greater than for the previous year.

New Franchise Sought in State of Washington

Gas pipe line franchises for roads extending from Moclips to the Thurston County line in the State of Washington, were asked of the county by the Grays Harbor Gas Company, of Aberdeen, Wash. The franchise apparently is for use in conveying natural gas if discovered in commercial quantities in any part of the county.

Acetylene Gas Rate Raised by Commission

The Saunemin Gas Company of Illinois has been granted an increase of 33 1/3 per cent in the rate for acetylene gas by a ruling of the State public utilities commission just published. The ruling covers the period from June 1, 1919 to April 24, 1920, and the company is required to make quarterly reports to the commission. In the decision Commissioner Funk stated that the commission had found that the cost of carbide had increased 50 per cent since the rates were last fixed, and the increased rates would yield only 6.45 on the investment.

Summary of Portland Gas & Coke Co.'s Financial Report

Even though operating costs continue to mount higher, gross revenues of the Portland Gas & Coke Company and of the Pacific Power & Light Company, its ally, are increasing, and likewise net earnings for July are higher than for the same month of last year. For the yearly period the showing is 24 per cent increase in net earnings of the gas company, while the Pacific company shows only 2 per cent more in net earnings for the year.

Following is a summary of the Portland Gas & Coke Company's report:

	July, 1919	12 Months
Gross earnings	$176,246	$2,024,956
Operating expenses	95,406	1,154,500
Net earnings	$80,840	$870,456
Balance after deducting all fixed charges	51,940	518,185

The report of the Pacific Power & Light Company shows:

	July, 1919	12 Months
Gross earnings	$180,997	$1,975,709
Operating expenses	85,431	1,065,137
Net earnings	$95,556	$910,572
Balance after deducting all fixed charges	50,323	381,689

Battery of Gas Fired Ovens Erected in Baked Bean Factory

A new feature in the industrial gas field is the use of gas in a large canning plant in baking beans. The average baked beans turned out by the canneries have undergone no more than a steaming process. A factory in the Chicago district is starting the manufacture of the real baked article, and for this purpose is erecting a battery of gas ovens. This company is a heavy user of industrial gas, and also employs the fuel in heating superheaters for sterilizing bottles in which the preserved product is packed.

Gas Fuel Proven Most Efficient for Annealing and Galvanizing Processess

Annealing and galvanizing processes using manufactured gas for fuel are to be carried out on a large scale in a plant under erection in the territory south of Chicago. The efficiency of gas fuel for these purposes has been demonstrated on a smaller scale in a number of factories which have adopted it. A heat of 900 deg. Fahr. is needed. To secure this temperature when coke is burned it is necessary to waste much heat. The temperature developed by burning coke is usually 1,300 deg. Fahr., and the difference in the temperatures is absorbed by the cold material when it is placed in the bath.

One of the features of the process is the ease with which it is controlled. An automatic valve enables the temperature to run up sufficiently to overcome the loss made by the introduction of the cold element. After this is done, the valve regulates the heat to 900 deg. Fahr.

3,000,000 Ft. Well Discovered by Big Dipper Company

The biggest gas well in the section of Bowling Green, Ky., is one which has just been drilled in on the Henry H. Lawrence lease, near Three Forks, Ky., by the Big Dipper Oil Company. The well contains about 3,000,000 ft. of gas.

Officers All Re elected

At the annual meeting and election of officers of the Webster and Southbridge Gas and Electric Company, conducted recently at the offices of the company, the choice resulted in the same officers for the coming year.

Nathaniel T. Hurlbut was re-elected president; together with the following: John W. Dobbie, vice-president; H. S. Shaw, general manager.

The directors are N. T. Hurlbut, John W. Dobbie, Louis E. Pattison, Philip Pearl, J. H. Platt, H. S. Shaw and Fred W. Johnson. The auditors chosen were Joseph Crawford, L. J. Upham and S. H. Davis.

Modesto Gas Company Applies for Increase

The Modesto Gas Company has filed an application with the State Railroad Commission asking for a slight increase in the gas rates for Modesto, Cal.

Frank A. Cressey, Jr., president of the corporation, in discussing the proposed raise, said:

"The ever-increasing cost of manufacture and distribution has forced us to apply to the commission for a slight increase. This increase will not, however, affect the restaurants and the larger consumers of gas and will mean but a very slight increase to the domestic consumers."

50,000,000 Ft. Gasser at 3,000 Ft. Depth

The Texas Company, in its No. 6 Myers well at Markham, Tex., has brought in a well at a depth of 3,130 ft. which is estimated to be making 50,000,000 cu. ft. of gas per day. This well is about half a mile from the company's No. 1 Gray, completed more than a year ago, with a gas production of about the same proportions. The company reports that the gas will be "killed off" and the new well drilled deeper.

Rate Increases on Ascending Scale Applied for

The West Virginia Central Gas Company and affiliated companies, including the West Virginia & Maryland Gas Company, of West Virginia, and the Northern Natural Gas Company, which companies serve a long list of communities in the States of West Virginia and Maryland, have applied to the public service commission for authority to increase rates for gas service. The proposed schedule of rates is on an ascending instead of a descending scale as the amount of gas used each month increases. That is, a higher rate is proposed to be charged where the consumer uses 100,000 cu. ft. of gas than if he uses only 10,000 cu. ft.

Wilmington Company's Report of June Business

The report of June business of the Wilmington (Del.) Gas Company shows production cost $49,528.17 and interest charges $18,189.15, making total expenses $67,717.32; surplus, $3,149.03; total revenue, $70,865.35.

The report for thirteen months ended June 30 shows:

Total revenue		$970,654.00
Less production expense		769,399.45
Net earnings		$201,254.55
Deficit, 13 months		45,535.21
Interest charges		$246,789.76
Total revenues		70,865.35
Holder cost	$28,237.43	
Oil tar produced	1,695.97	
	$26,541.46	
Transmission and district expenses	6,676.90	
Office ex., taxes and depreciation	16,309.81	
Total burner cost		49,328.17
Net revenue		$21,337.18
Interest on bonds	$10,836.81	
Interest on notes	1,148.34	
Interest on preferred stock	6,204.00	
		18,189.15
Surplus, June		$3,148.03
Thirteen months ended June 30:		
Total revenues		970,654.00
Operating expenses, taxes and depreciation		769,399.45
Net earnings		$201,254.55
Interest charges		246,789.76
Deficit, 13 months		$45,535.21

National Safety Council and Various Gas Associations Studying Problem of Safety in Gas Welding

The makers of industrial gas products, such as acetlyene, hydrogen and carbo-hydrogen tanks, and the manufacturers of metal products, have joined hands to study the problem of retaining the enormous advantages of the new processes without the percentage of risk, which is involved in the use of gas and electric welding in the manufacture of metal products. Because of the comparatively recent development of the blow-pipe and electric arc processes, ignorance is frequent amongst the welders and cutters, and therefore the toll from this industry has been large. Under the direction of the safety engineers of the National Safety Council, such bodies as the Gas Products Association, the International Acetylene Association, and State universities have joined in making a study of safe practices in gas and electric welding. Their recommendations, tabulated briefly, may be regarded as a contribution of great value to both sellers and users of electrolytic gas.

St. Louis County Gas Company Invites Its Customers to Become Partners

The St. Louis County, Mo., Gas Company is inviting its customers to become partners in the business. Recently advertisements have appeared in the St. Louis and St. Louis County papers offering gold notes of the company's issue of Nov. 1, 1918. These are issued in $50, $100, $500 and $1,000 demoninations. They bear interest at the rate of 6½ per cent per annum, payable May 1 and Nov. 1, and redeemable Nov. 1, 1923. The company offers $200,000 worth of the notes for sale. They are secured by $130 in the company's gold bonds for every note.

The company makes its particular appeal by advertising the fact that a year's interest on a $500 note will pay the average size gas bill for the year. Customers are offered a chance to make a good investment, become friendly to the company by becoming a partner with it and at the same time pay their gas bill out of earnings.

Laclede Company's Window Display of Coke for Fuel Attracting Attention

The Laclede Gas Light Company of St. Louis, Mo., is advertising the coke it obtains as a by-product and sells to St. Louis householders by window displays which are attracting favorable attention in the daily press of St. Louis. One of the company's two large windows that front on St. Louis' main business thoroughfare, contains a furnace and two gas burners. Attached to the various parts of the furnace and stove are ribbons that lead to cards prominently displayed in the foreground, bearing such legends as: "Don't let the ashes heap up level to the grate," "Coke is cheaper than coal" and "Coke is cleaner as a fuel than Coal. It has been noted that the window display always has someone in front of it.

Pacific Coast Gas Association Convention Opens September 16

The Pacific Coast Gas Association's twenty-sixth annual convention will open its "Victory" convention at Los Angeles, Cal., on Sept. 16. The sessions will be held for four days, from the 16th to the 19th, inclusive.

The secretary of the association reports that the papers which have been prepared for presentation before the convention, together with the reports which will be given by the chairmen of the several standing committees, particularly those of the Public Policy Committee and the committees on legislation and taxation and the piping of buildings for gas, promise to be of unusual interest. They are: "Modern Gas Ranges," B. S. Pederson; "Pipe Joints," W. M. Henderson; "Complaints,' F. J. Shaffer; "Use of Natural Gas for Power and Gas Engines," F. H. Bivens; "Selling Gas for Industrial Uses," C. M. Roberts; "Industrial Gas Uses," H. M. Crawford; "Cause and Effect of Public Opinion on Gas Sales," Frank Weiss; "Advertising to Sell Gas," G. Douglas Mantle; "Wrinkles," W. M. Henderson; "Experience," John Clements.

The headquarters of the conven-

tion will be at the Hotel Alexandria in Los Angeles, where suitable accommodations have been provided for the daily sessions and for the banquet, which will be held on Thursday evening. In keeping with the spirit of the times, this banquet will be "dry," but it will be well sprinkled with jollity and good fellowship. The entertainment committee has also seen to it that there will not be an idle moment for the ladies and many special events have been arranged for their benefit. On Wednesday evening the ball will be held, and on Thursday evening, while the men feast, the ladies will be tendered a theatre party. On Friday, the business meetings of the association being over, the usual outdoor entertainment will be provided, the hosts on this occasion being the Los Angeles Gas and Electric Corporation, the Southern California Gas Company and the Southern Counties Gas Company. A trip to beautiful Redondo Beach will be made where luncheon will be served and various modes of amusement furnished for all during the afternoon. The members of the association, one and all, are making plans to be in attendance at the convention.

Construction Notes

North Texas Company Extending Lines and Replacing Old System

The North Texas Gas Company, complying with the franchise granted it by the city of Hillsboro, Texas, is rushing the work of construction. The Lone Star Company is building the extension lines. The plant to be put in will be a good belt line system which will do away with many of the disadvantages of the old system of straight lines and dead ends.

The North Texas Company, in order to improve its service in this section of the State is tearing out the old system in the city of Corsicana, and will put in an entirely new system.

Gehnrich Heat Oven Company Erecting $145,000 Building

The Gehnrich Indirect Heat Oven Company, of Brooklyn, N. Y., have broken ground for their new plant at Skillman Avenue, Buckley and Honeywell Streets, Long Island City. The size of the building will be 200 x 144, two stories high, with an additional story at one end for executive offices. The cost of building will be $145,000.

$500,000 Gas Plant Works Moving from Ohio to West Va.

The large gas plant of the Connecting Gas Company, situated in Gravel Bank, Ohio, has ceased to operate. Work of dismantling the plant has been started with a large force of workmen engaged in the work.

Four years ago the big gas plant was built at Gravel Bank, at a cost reported to be in the neighborhood of half a million dollars. It is understood that the gas plant is to be moved into West Virginia, near to Granville. According to report, the move is being made as the situation at Gravel Bank, Ohio, proved to be not the desired location for the plant, with the gas company holding the biggest per cent of their gas properties in West Virginia.

Baldwin Park, Cal., Will Be Distributing Point for Industrial Section

The Southern Counties Company is laying a 3-in. line to Baldwin Park, Cal., from the line which now supplies Covina, Cal. Some time ago a line was run to the plant of the Covina Irrigation Company to supply the immense pumps at that place. This is about midway between Covina and Baldwin Park, and is the point from which the Baldwin Park line is running. It is hoped at a later date, when pipe can be more easily secured, to extend the gas line to embrace all of Baldwin Park and make that a distributing point for the industrial section around that place.

Public Service Company of Illinois Plans Exhibit for Two Conventions

A large exhibit will be given by the Public Service Company of Illinois at two Chicago conventions of importance to the gas industry during the months of September and October. The same display will be made at the Electrical Trades Exposition at the Colliseum Oct. 11 to 25 and at the convention of the American Steel Treaters' Society during September.

The exhibit will portray the service of the company in the great industrial region surrounding Chicago, and will take in the series of towns beginning with Waukegan, Ill., on the north, and including Maywood, Melrose Park, Bellwood, Clearing, Summit, Argo and Cicero on the west; Blue Island, Harvey, Riverdale and Chicago Heights on the south, together with the City of Joliet and as far as Kankakee and Streator. Gas from the company's mains is the fuel used in many of the plants for numerous purposes. There are establishments in this district which carry on over two dozen distinct operations with fuel gas, and whose gross consumption exceeds that of many towns in the country for a long period.

New Solid Welded Pipe Line Constructed by Southern Counties Company

The Southern Counties Gas Company of California reports that it has completed what it considers one of its finest pieces of construction work, a solid pipe line extending from Pomona, Cal., to the south city limits of Ontario, Cal., 8 in. in diameter and capable of withstanding more than 100 lb. pressure to the square inch.

B. G. Steinruck, district agent for the Southern Counties Company, states that this line was started thirty days ago, and notwithstanding the fact that every piece of pipe is welded to the next, thus making absolutely a solid line between the cities, it is all now completed and carrying gas for consumption at the Ontario end.

In laying the line, when about a mile was finished the end of the pipe would be plugged up and the gas turned on at a pressure of 100 lb. Very careful inspection and search for any leaks was made through the section laid. Then another mile would be laid, following the same procedure, until the entire line was completed, all solidly welded and not a leak in the entire line.